



California ISO

SIBR - BSAP Scheduling Coordinator Users Guide

Nov 4, 2014

Revision History

Version: 5.0

Release Date: 11/4/2014

Date	Version	By	Description
2/28/07	3.0	MM	Added information on Indicator Viewer Screen. Added screen shots for uploading bids and trades
10/11/07	3.1	WT	Updated for IMS Update 1
11/20/07	3.2	WT	Updated for IMS Update 2
12/7/07	3.3	WT	Review of Trades Status Removed outdated info. Added ETC scheduling screenshot.
8/24/09	3.4	WT	Capacity Limit Ind Flag on EN Product for RA.
5/14/13	4.0	WT	Functionality documentation added from post Go-Live through Pay for Performance Regulation Mileage.
11/4/14	5.0	WT	Fall 2014 Release Functionality added. (Wheeling, Transaction bids) EIM Base Schedule.

Contents

1	Introduction	7
1.1	References	8
1.2	Overview	8
1.2.1	Theory	9
1.2.2	Practice	18
2	Common UI Features & Navigation	23
2.1	Application – Specific Menu	25
2.2	Application Content Area	27
2.2.1	Filter Pane	30
2.2.2	Data Grid	34
3	Bids	43
3.1	Day-Ahead Bids	44
3.2	Real-Time Bids	49
3.3	Submitting or Canceling Bids	51
3.3.1	Bid Summary Display	52
3.4	Bid Entry Walkthrough	57
3.4.1	Transaction Walkthrough	61
3.4.2	Wheeling Walkthrough	62
4	Trades	65
4.1	Hourly Trade Detail Display	65
4.2	Trade Summary Display	70
4.3	Trade Entry Walkthrough	73
5	Advanced Submit	77
6	Portfolios.....	82
6.1	Creating Portfolio Displays	82
6.2	Save Bids to Created Portfolio Displays	85
6.3	Submitting Bids From Portfolio Displays	86
7	Indicator Viewer Screen.....	92
7.1	Viewing Information in the Indicator Viewer Screen	92
8	OTC Viewer Screen	94
8.1	Viewing Information in the OTC Viewer Screen	94
9	Energy Forecast Screen	96
9.1	Energy Forecast Screen	96

10 Base Schedule Aggregation Portal (BSAP).....99

10.1 BSAP Screens.....99

10.1.1 BSAP Base Schedule 99

10.1.2 BSAP Base Balance Viewer 103

11 FAQ.....104

11.1.1 General Questions 104

11.1.2 Questions About Bids 106

11.1.3 Questions About Templates 108

11.1.4 Questions About Users and Permissions 108

1 Introduction

Purpose

In response to the California energy crisis of 2000 and 2001 the California Independent System Operator (CAISO) management initiated the MRTU project to:

- Take a comprehensive view of the changes needed in the structure of California's electricity markets with a focus on those markets that are operated by the CAISO in performance of its core functions, and
- Develop an integrated program of proposed market design changes that will address current problems in a systematic fashion and create a framework for a sustainable, workably competitive electric industry that benefits all California consumers and is compatible with the rest of the western region.

One part of the CAISO system is the Scheduling Infrastructure Business Rules (SIBR) component. From the viewpoint of a Scheduling Coordinator (SC) who interacts with the system, this component:

- Accepts bids and trades for energy and energy-related commodities from Scheduling Coordinators that are certified to interact with CAISO,
- Ensures that those bids and trades are valid and modifies bids for correctness when necessary.
- Enters those bids and trades into a database for processing by other components of CAISO's management systems, and
- Provides required feedback to SCs concerning bids and trades that have been submitted.

This manual will instruct a Scheduling Coordinator (SC) in the usage of the California ISO Software Infrastructure Business Rules (SIBR) web user interface for entering and submitting bid data.

Audience & Prerequisites

This manual is intended to be used by persons who wish to use the web-based user interface supplied by the CAISO system to submit bids and trades for energy and energy-related commodities and services

How to Use This Manual

The organization of this manual is as follows:

- Chapter 1 is introductory material. Notably, it contains an overview of the process that the California ISO (and the software

system that has been put into place by CAISO) follows in accepting and evaluating bids. This material is useful in understanding how bids are processed including bid statuses, the order in which processing steps occur, etc. The chapter also explains how to access the system.

All users of the system should read this chapter.

- Chapter 2 describes basics of the user interface used to enter bids. All user interface screens are constructed of certain basic elements; they are described here.

All users who will interact with the SIBR User Interface should read this chapter.

- Chapter 3 discusses the components of bids and how to enter them. It also describes how to submit bids, how to view bid status as a bid progresses through the system, how to cancel a bid, how to create a new bid to replace one that is already in the system, etc.

Personnel who enter, submit, or need to view the status of bids should read this chapter.

- Appendix A is a glossary. In this instance, the glossary is quite large in an effort to provide a common vocabulary for all persons involved in the bidding process.
- Appendix B contains flowcharts for both Day-Ahead and Real-Time bid processing. These are of interest to persons who wish to see the entire process described in a single diagram.

1.1 References

1.2 Overview

The following chapter will discuss how the bidding process works at the California ISO, using the software system that has been jointly designed by CAISO and Siemens and built by Siemens. Not only will we discuss how the process works, but we will also establish a common vocabulary for that discussion¹.

Note that the overview in this chapter is not intended to explain every detail of the process. It will, however describe the major steps in bid processing. The overview is in three sections:

¹ This document includes an extensive glossary of terms and acronyms used in the context of the CAISO system.

- Theory: where we explain how the main flows in the process work.
- Practice: where we discuss in general terms how an SC interacts with the system via the user interface.
- FAQ: where we answer questions – some which have come from customers and some that we’ve made up ourselves on behalf of customers.

1.2.1 Theory

1.2.1.1 Bids

What is a “Bid”?

A bid is an “offer for the supply (or demand) of a market commodity for a specified market. The CAISO has adopted the use of a single energy curve for all services offered by a single resource. A bid in the CAISO SIBR system will contain all commodities and self-schedules being offered to a specified CAISO markets on a resource.

How is a Day-Ahead Bid Created & Submitted?

Figure 1 illustrates the process of creating and submitting a bid. In this case, we are discussing a bid for the Day Ahead Market. (Note that flowcharts for the complete Day Ahead and Real-Time processing flow are included in Appendix B.)

Figure 1: Day-Ahead Bid Creation & Submission

A bid is created by a System Coordinator (SC) using the CAISO SIBR GUI.

**Bid
Creation**

This results in a “Created Bid” that is saved in the system’s database.

**Created
Bid**

When the SC has completed creation of a bid, s/he uses the GUI to “submit” the bid...

**Bid
Submission**

...which results in something called a “submitted bid”. After a bid is submitted, the system will act on the bid.

**Submitted
Bid**

Although this process seems simple, there are important subtleties. Specifically, there is an important difference between “created bid” and “submitted bid”. An SC uses the GUI to create a bid by entering values for all the bid components. During this process, beyond some very simple validation (e.g., no alpha characters in numeric fields) and saving the bid in the database, the system takes little interest in the actual contents of the bid.

After the SC has created the bid, it is submitted by clicking a button on the bid creation page. At this point, the system queues the bid for validation by the “rules engine” and informs the SC that the bid has been submitted.

After a bid is submitted, the system maintains a complete history of the bid and actions performed. The SC can view the bid; it may also be used as the basis for creating another bid.

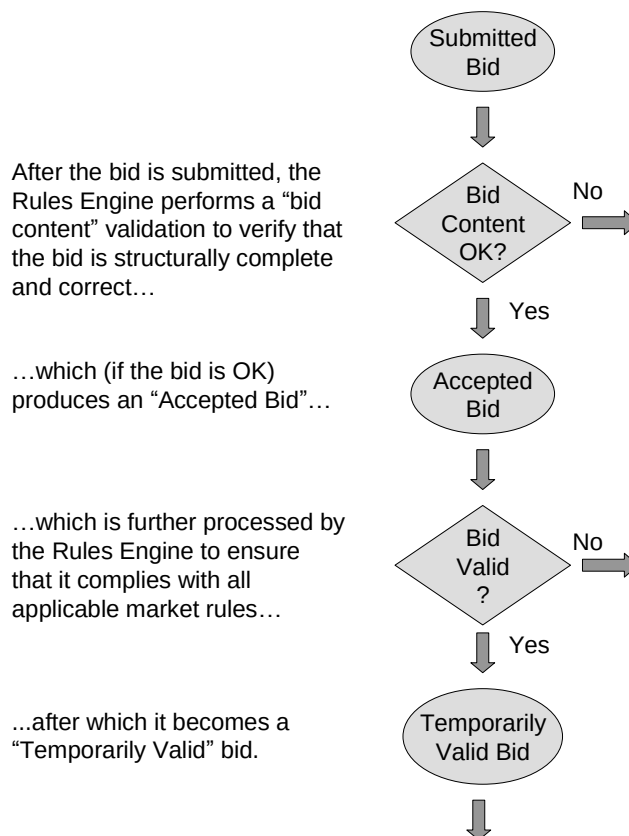
How is a Day Ahead Bid Validated?

Once an SC submits a bid, it is available for the system to validate. The SIBR Rules Engine performs validation. The SIBR Rules Engine is programmed with several hundred rules that are used to validate the bid.

 California ISO Shaping a Renewed Future	SIBR – Scheduling Coordinator Users Guide	Version: 5.0 Date: 11/4/2014
--	--	---------------------------------

Flowcharts for the complete Day Ahead and Real-Time processing flow are included in Appendix B.

Figure 2: Day-Ahead Bid Validation (Simplified)



The process of validating a bid actually takes place in multiple steps; however, these multiple steps are automatic and are seamless to the user. Figure 2 illustrates two of those steps:

- Content Validation determines that the bid adheres to the structural rules required of all bids. This includes such things as validating that all required components are present, the units or services contained in the bid actually exist, etc.
- If the Content check fails, the bid becomes a “Rejected Bid”.
- After Content Validation succeeds, Bid Validation verifies that the various components of the bid adhere to the applicable market rules. If this validation passes, the bid becomes eligible to be used in a market.

These and all future bid processing steps can be said to be performed “in the background”. This means that the system will not immediately inform the SC of errors. After the validation process has completed, the system remembers any errors; it will then inform the SC that validation has completed and will present error analysis to the SC. (If the SC has logged off, error analysis will be available the next time s/he logs on.).

If all validation up to this point passes, the bid becomes a “Temporarily Valid Bid”. If validation fails, the bid becomes an “Invalid Bid”. (For the sake of simplicity, failure paths are not shown in Figure 2)

Day Ahead Bid Processing

So, now the system has a “Temporarily Valid Bid”. Based upon market requirements and prior agreements, the bid may either be accepted as-is or modified by the system. Figure 3 shows the first portions of Bid Processing in flowchart form.

The system analyzes the Temporarily Valid Bid produced in Figure 2. Depending upon master file data, data contained in the bid and market rules, SIBR may automatically modify the bid to produce a valid bid that can be accepted into the designated CAISO market.

- If the bid is acceptable to the system as-is, it is called a Conditionally Valid Bid for dates beyond the latest Master File date, and would be a Valid Bid for the date the last Master File was received.
- If the bid is acceptable only after the system has automatically modified it, it is called a Conditionally Modified Bid for dates beyond the latest Master File date, and would be a Modified Bid for the date the last Master File File was received. Some examples of when a bid would be modified by the SIBR system are as follows:
 - The Regulation Mileage Up or Down was not included in the submitted bid when a Regulation component did exist. SIBR will insert the Regulation Mileage bid at the default cost.
 - The energy bid curve range specified in a bid does not cover the Reliability Availability Obligation for the resource. SIBR will extend the energy bid curve to cover the additional capacity specified for the resource.

At this point, the SC has the option to view the bid and:

- Cancel the bid, in which case the bid is retained in the system database as a Cancelled Bid. Cancelled bids will not be further processed.

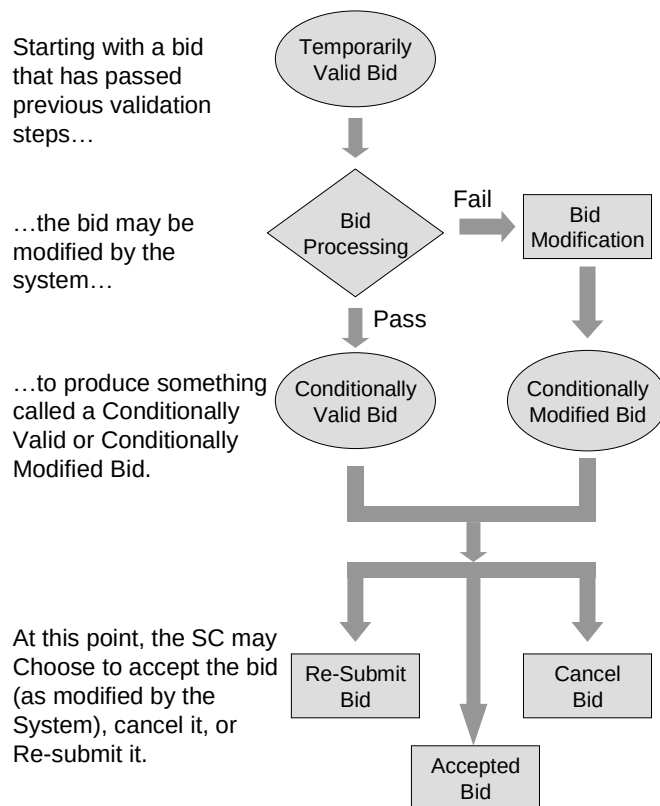
 California ISO Shaping a Renewed Future	SIBR – Scheduling Coordinator Users Guide	Version: 5.0 Date: 11/4/2014
--	--	---

- Note: Cancel is used for Market Accepted bids, those are bids that are in a Conditionally Modified / Modified or Conditionally Valid / Valid or MF Inserted status.

Do not use 'Delete' for Market Accepted bids, Delete is for bids that are in a 'Create', 'Invalid' or 'Rejected' status.

- Modify and re-submit the bid, in which case the original bid is retained in the system database as an Obsolete Bid. Obsolete bids will not be further processed. If the bid is re-submitted, processing begins again as shown in Figure 1. (Note that the GUI allows the SC to use a Conditionally Valid / Valid Bid or a Conditionally Modified / Modified Bid or MF Inserted as the basis for a new bid for re-submission.)
- Leave the Conditionally Modified / Modified or Conditionally Valid / Valid or MF Inserted bid as-is to be processed in the designated CAISO market.

Figure 3: Day-Ahead Bid Processing



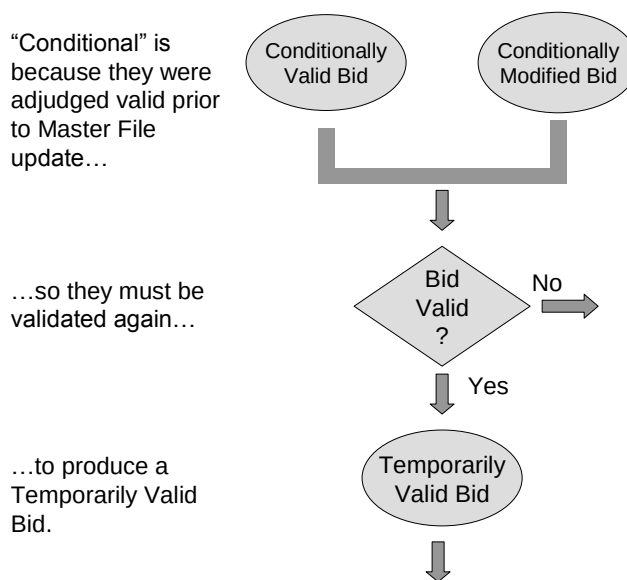
Master File Data and Conditional Status

Master File changes are introduced into the system once per day. Since Master File changes may affect bid acceptance, all bids must be re-validated after the final Master File update and before the designated trading period when the bid will take effect. This explains the use of the word “Conditionally” in our earlier discussion of Bid Processing. Bids for the Day-Ahead market may be submitted up to 7 days in advance. Therefore, a bid that is submitted on Monday afternoon for Thursday’s Day Ahead Market that has a status of Conditionally Valid must be re-validated after the close of the Thursday market to take into account any Master File changes that may have occurred. Bids will retain the status of Conditional until the master file update has occurred for the designated trading period.

Validation After Master File Update

After the Master File has been updated, all “conditional” bids are re-validated via a process very similar to what we’ve seen previously, as illustrated in Figure 4.

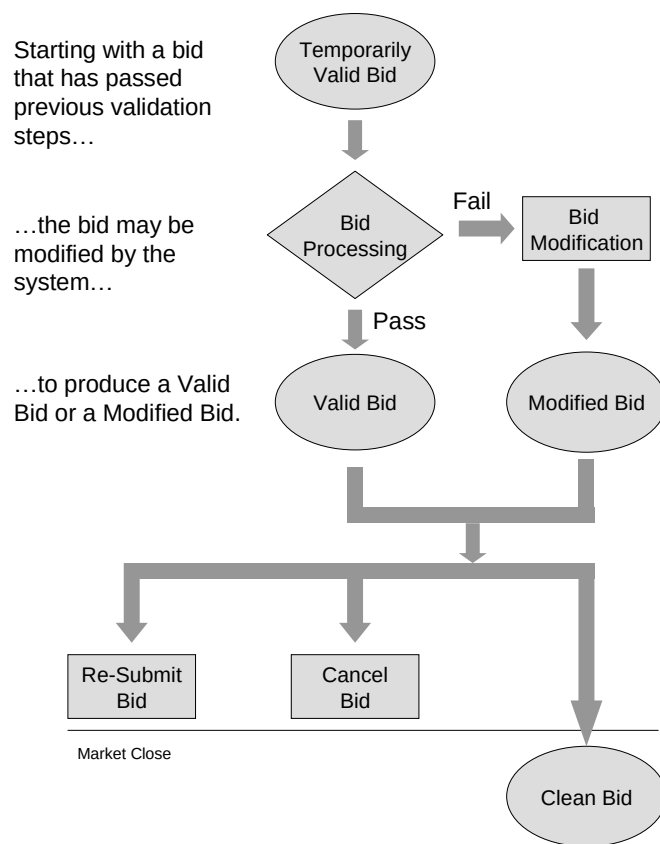
Figure 4: Bid Validation (After Master File Update)



Bid Processing After Master File Update

Also, after the Master File is updated, the Bid Processing steps are repeated, this time to produce either a Valid Bid or a Modified Bid.

Figure 5: Day Ahead Processing (After Master File Update)



As the illustration shows, this process is quite similar to the processing step that occurs before Master File update. Again, the system can either:

- Accept the bid as-is.
- Modify the bid.

This time, the bid is given a new title, either MF Inserted, Valid Bid or Modified Bid; any reference to “conditional” is gone, as the bid has now been processed with the Master File data that will be in use on the day for which the bid applies.

As in the prior case, the SC can view the bid. As before, the SC may:

- Re-submit the bid, in which case all validation steps and other bid processing are repeated.
- Cancel the bid.
- Allow the bid to stand.

As in all previous processing, if the operator re-submits or cancels the bid, it is retained in the system database but will not be processed further. It may however, be viewed by the SC and possibly used as the basis for future bids.

Real-Time Market Bids

Handling of Real-Time Market bids is quite similar to what was described earlier for day-ahead. The major difference derives from the fact that Real-Time bids are not submitted days before the target market period; therefore there is no requirement to process the bid before Master File Update and again after. (Note that flowcharts for the complete Day Ahead and Real-Time processing flow are included in Appendix B.)

Generated Bids

In some cases, for certain generating resources, an SC may be required to bid in the full range of available capacity for that resource on a daily basis to the CAISO. If the SC fails to enter a bid for the resource, the system may create a bid on the SC's behalf. Such a bid will be created after market close (to avoid conflicting with any bid that the SC may enter) and will be based upon data in the Master File. This type of bid is called a Generated Bid. The relevant SC may view these bids, but since they are generated after market close, the SC may not modify them.

1.2.1.2 Trades

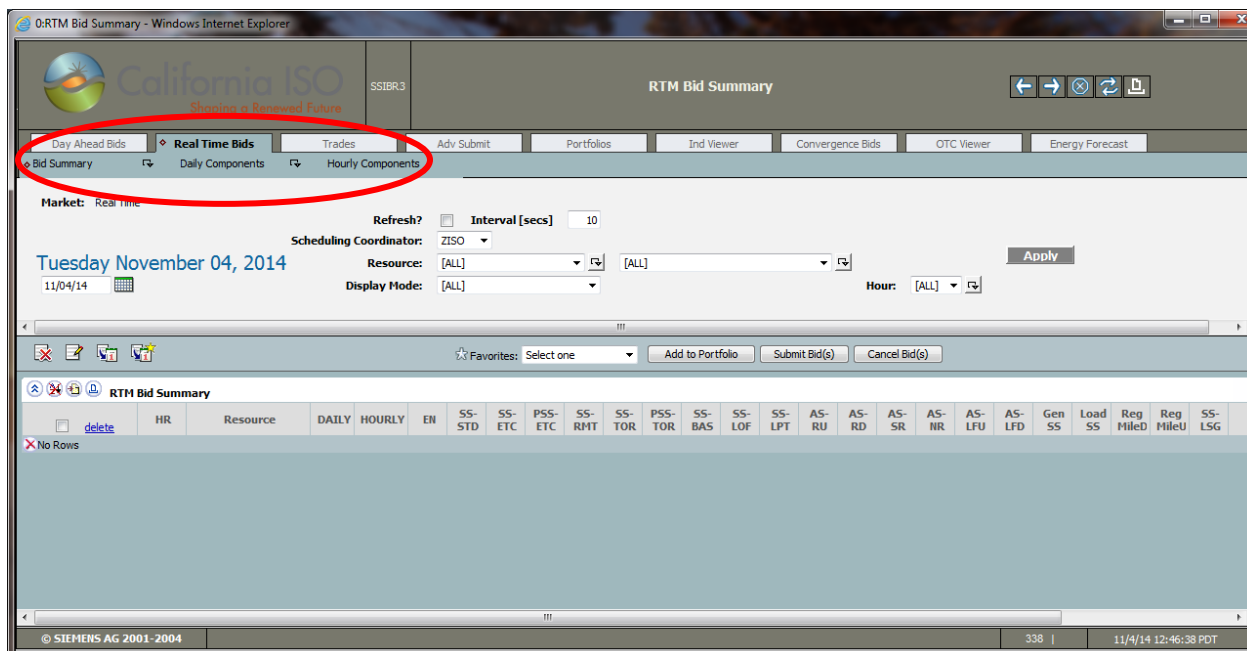
1.2.2 Practice

In the last several pages, we have discussed how bids and trades are validated and processed by SIBR. In the following chapter, we'll cover in general terms, the practical aspects of accessing the system, entering, submitting, and managing bids. The goal here is to understand the basic principles and processes – later chapters will address particulars such as which buttons to push and when.

1.2.2.1 Basic Display Layout

Figure 6 illustrates basic elements of the layout of CAISO SIBR displays.

Figure 6: Display Layout (1)



Application-Specific Menu

As stated previously, this document is concerned with entry, submission, and management of bids. In this case, the Application-Specific menu will contain the following items:

- Day-Ahead: Screens accessible through this menu item are used to create, submit, and manage bids for a day-ahead market.
- Daily Components: This screen is used to enter (edit) those bid parameters that do not change for the entire trade day.
- Hourly Components: This screen is used to enter (edit) those bid parameters that may be different for each hour of the market period.

- Summary: This screen is used to submit or cancel bids for the day-ahead market. It is also used to view status of bids that have been submitted or are available for submission.
- Real-Time: Screens accessible through this menu item are used to create, submit, and manage bids for a Real-Time market. There are three displays with the same basic functionality as those provided for the Day-Ahead market.
 - Daily Components
 - Hourly Components
 - Summary
- Advanced Submit: Advanced submit will offer easier ways to do multiple resources and days. The Advanced Filter page will give the user an easier way of submitting complex sets of bids from the portfolios.
 - Upload Bids
 - Upload Trades
- Portfolios: An SC can create bids (either from scratch or from another bid) and save them for future use. This capability is accessed from the Portfolio menu item.
 - Manage Bids
 - Manage Trades
 - Manage CB Bids
- Reporting: (Functionality will be included in a planned UI enhancement project)
 - Current reporting is accessible through the Market Participant Portal (MPP).
- Ind Viewer: An SC can check imbalances on select resources that are in either the Day Ahead or Real Time Markets for balancing (ETC/TOR/WHL) and or priority (ETC/TOR).
 - Day Ahead
 - Real Time
- Convergence Bids: Screens accessible through this menu item are used to create, submit, and manage Convergence bids (also known as Virtual Bids) for a day-ahead market.
- OTC Viewer: An SC can view by Interchange for a given date the Import and Export Limits received in SIBR and if there is an 'Isolated Tie Condition'. (condition when 0 limit exist)

1.2.2.2 More About Bids and Bid Contents

Bid Components

A bid will contain two types of components:

- **Daily Bid Components:** These are components that are set for the entire trade day for the resource designated in the bid. They are entered only once a day either into the Day-Ahead or Real-Time Market. Examples of these types of bid components are Ramp Rates, Start Up Curves, Minimum Load Costs, Energy Limits, State Transition (MSG only), and Charge Limits (NGR only).
- **Hourly Components:** These components may be different for each hour of the market period of the bid. An example of these types of bid components is energy bid curves as well as quantities and prices designated for RUC and Ancillary Services bid components.
 - Product Display
 - Hourly Display (Wheeling Reference)

Hourly components are often repetitive. Data tables for the Day Ahead and Real-Time markets include features to facilitate entry of repetitive data. One of the important tools is the right-click menu. See the Input Accelerators section on page 29 for details.

Incomplete or “In Process” Bids

The system database provides a “scratchpad” area for bids while they are being prepared. Once bid data have been entered, clicking the Update button on the Daily or Hourly Components page causes data to be saved to the database. A bid is not submitted for consideration by the system until an authorized SC formally submits the bid from the Summary page. One of the benefits of this arrangement is that it is not necessary to enter a bid from start to finish in one session. Portions may be entered, the (incomplete) bid saved, completed at a future time (possibly by a different person), and ultimately submitted from the Summary page.

Multiple Bids

Bid data entry pages allow the SC to enter data for multiple bids on the same page. For example, if an SC is responsible for bidding three generators, it is possible to view all three at the same time and, more importantly for data entry purposes, to use the page’s input accelerators to minimize the amount of typing required.



California ISO
Shaping a Renewed Future

SIBR – Scheduling
Coordinator Users Guide

Version: 5.0
Date: 11/4/2014

2 Common UI Features & Navigation

There are a number of elements that appear on all (or many) GUI pages. We've already talked about some of them:

- Portal Menu
- Application Menu
- Logout and Help links.
- Application Content Area.

In this chapter, we'll talk about other common display elements and concepts.

A Couple of Important Definitions...

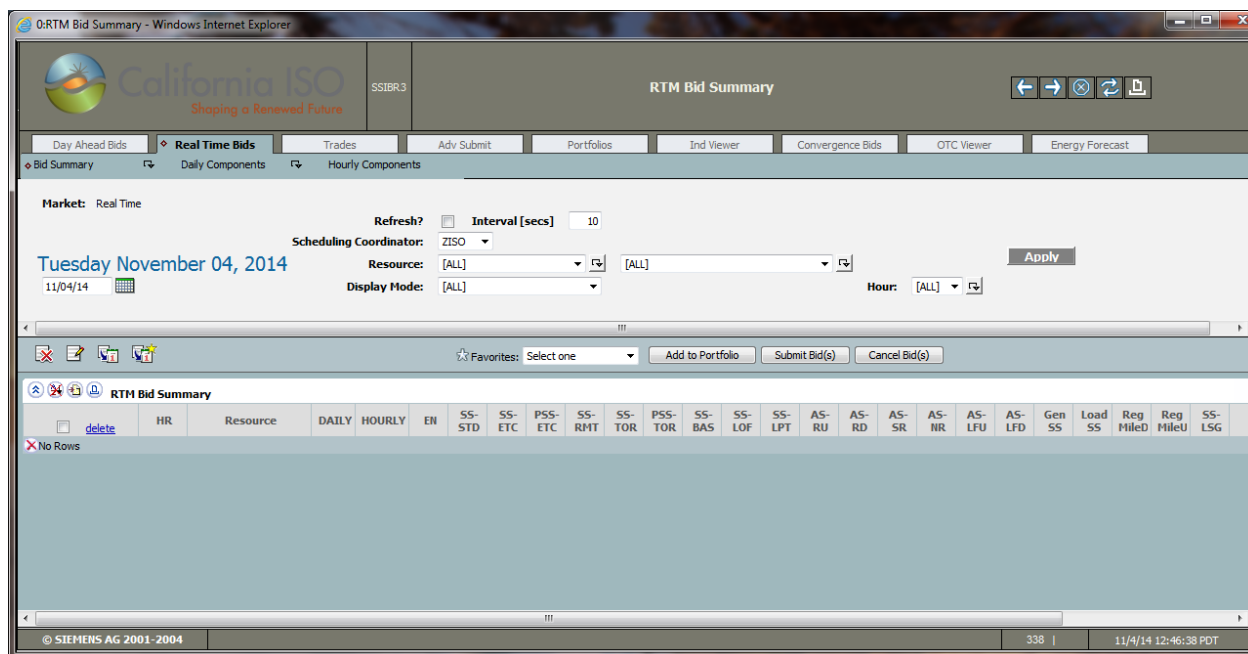
Bids are submitted for a market. There are two market types:

- A Day-Ahead Market is basically one 24-hour² period. Bids for a Day-Ahead market may be submitted up to 7 days in advance of the target market date. Bids may be submitted until the "market close" event for the target market date (currently 10:00 A.M.) on the previous day.
- A Real-Time Market consists of one hour. Real-Time Market bids (for a particular trade day) are accepted beginning when the Day-Ahead results are published (Approximately 1:00 p.m. the previous day) until the real-time market for the designate hour closes.

The GUI screens used to enter Day-Ahead and Hour-Ahead bids are quite similar, although there are some significant differences. Day-Ahead bid entry is discussed in Chapter 3.1. Entering bids for Real-time Markets is discussed in Chapter 3.2.

² There is one 23-hour (no HE3) and one 25-hour (has HE2* for second HE2) Day Ahead Market per year due to daylight savings time.

Figure 7: Display Layout (2)



Display Layout

We've touched previously on general aspects of display layout. To review, all SIBR Bid Management displays have the same basic layout as illustrated in Figure 7.

2.1 Application – Specific Menu

The SIBR application menu shown in

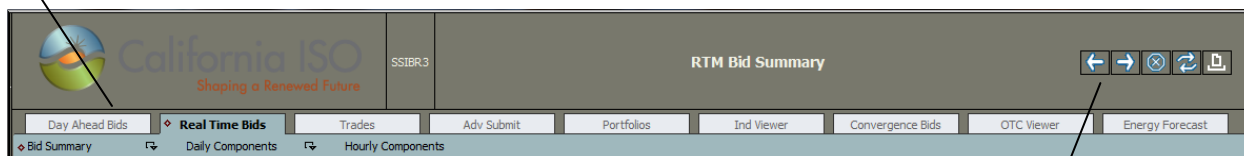
 California ISO Shaping a Renewed Future	SIBR – Scheduling Coordinator Users Guide	Version: 5.0 Date: 11/4/2014
--	--	---

Figure 8 contains the following items:

- Day Ahead
- Real Time
- Trades
- Advanced Submit
- Portfolios
- Ind Viewer
- Convergence Bids
- OTC Viewer
- Energy Forecast
- Reporting (Not available as of this posting)

Figure 8: SIBR Application Menu

Selection Tab



Menu
Navigation

Figure 9: Navigation Toolbar

Previous
Page



Next Page

Stop Page
Loading

Refresh
Page

Print
Page

2.2 Application Content Area

A Scheduling coordinator will be concerned mostly with what is in the portion of Figure 7 labeled as “Application Content Area”.

For most Bid Management displays, there are three basic components in the Application Content Area, as illustrated in Figure 10. These are:

- **Filter Pane:** The filter pane is present on most SIBR displays. It contains filters that allow the user to control the information displayed on the data grid portion of the display. The filter pane is always at the upper edge of the Application Content Area.
- **Data Grid(s):** Below the filter pane is at least one data grid. Bid data are entered, edited, and viewed in the data grid. Some displays may have additional data grids.

 California ISO Shaping a Renewed Future	SIBR – Scheduling Coordinator Users Guide	Version: 5.0 Date: 11/4/2014
--	--	---------------------------------

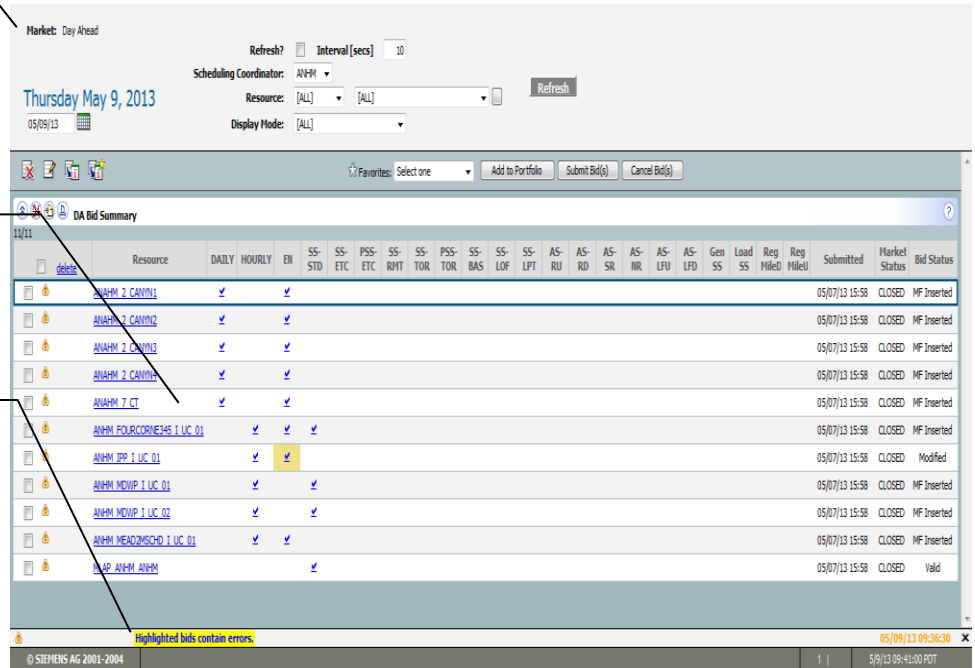
- **Message Bar:** This is at the very bottom of the Application Content Area. It is used to advise the user of various events, errors, etc. This area grows and shrinks vertically to accommodate the message(s) that need to be shown.

Figure 10: Basic Display Components

Filter Pane

Data Grid

Message Pane:
grows and shrinks to
accommodate content



The screenshot displays the SIBR Scheduling Coordinator interface. At the top, the 'Filter Pane' includes controls for 'Market: Day Ahead', 'Refresh?' (checkbox), 'Interval [secs]: 10', 'Scheduling Coordinator: ANHM', 'Resource: [ALL]', 'Display Mode: [ALL]', and a 'Refresh' button. Below this is a toolbar with icons for file operations and buttons for 'Favorites: Select one', 'Add to Portfolio', 'Submit Bid(s)', and 'Cancel Bid(s)'. The 'Data Grid' is a table titled 'DA Bid Summary' showing bid details for various resources. The 'Message Pane' at the bottom displays a yellow warning message: 'Highlighted bids contain errors.' The footer shows '© SIEMENS AG 2001-2004', a page indicator '1 |', and a timestamp '5/9/13 09:41:00 PDT'.

Resource	DAILY	HOURLY	EN	SS-STD	SS-ETC	SS-ETC	SS-RMT	SS-TOR	SS-BAS	SS-LOF	SS-LPT	AS-RU	AS-RO	AS-SR	AS-NR	AS-LFU	AS-LFD	Gen SS	Load SS	Reg Miled	Reg Miled	Submitted	Market Status	Bid Status
ANAHM 2 CANNING																						05/07/13 15:58	CLOSED	MF Inserted
ANAHM 2 CANNING																						05/07/13 15:58	CLOSED	MF Inserted
ANAHM 2 CANNING																						05/07/13 15:58	CLOSED	MF Inserted
ANAHM 2 CANNING																						05/07/13 15:58	CLOSED	MF Inserted
ANAHM 7 CT																						05/07/13 15:58	CLOSED	MF Inserted
ANHM FOURCORNERS 1 UC 01																						05/07/13 15:58	CLOSED	MF Inserted
ANHM IPP 1 UC 01																						05/07/13 15:58	CLOSED	Modified
ANHM MOWP 1 UC 01																						05/07/13 15:58	CLOSED	MF Inserted
ANHM MOWP 1 UC 02																						05/07/13 15:58	CLOSED	MF Inserted
ANHM MEADOWSCHED 1 UC 01																						05/07/13 15:58	CLOSED	MF Inserted
ANP ANHM ANHM																						05/07/13 15:58	CLOSED	Valid

Highlighted bids contain errors.

© SIEMENS AG 2001-2004 | 1 | 5/9/13 09:41:00 PDT

2.2.1 Filter Pane

Filters in the Filter Pane allow the user to customize (or select) what is shown on the display. The SIBR UI employs a small number of filter types; these are described in the following paragraphs.

Simple Pull-Down or Select List Filter

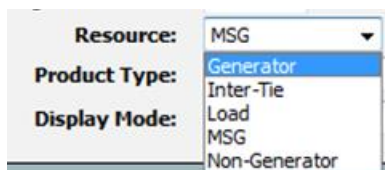
Figure 11 illustrates a pull-down list filter. These are known by other names, including “select filter” and “select list”. This type of filter is quite common and is probably familiar to most users.

Figure 11: Pull-Down / Select List (1)



Using a filter like the example shown in Figure 11, the user can select from a list of Resource Types. Clicking on the arrow at the right side of the box exposes a list, as illustrated in Figure 12.

Figure 12: Pull-Down / Select List (2)



In this case, the user has five selections: Generator, Inter-Tie, Load, MSG or Non-Generator. An important aspect of this type of filter is that only one item may be selected from the list. This type of filter appears in the SIBR UI in cases where the user may wish to make a selection of one from a number of options. Note: If the list is long, a scroll bar may be present on the list.

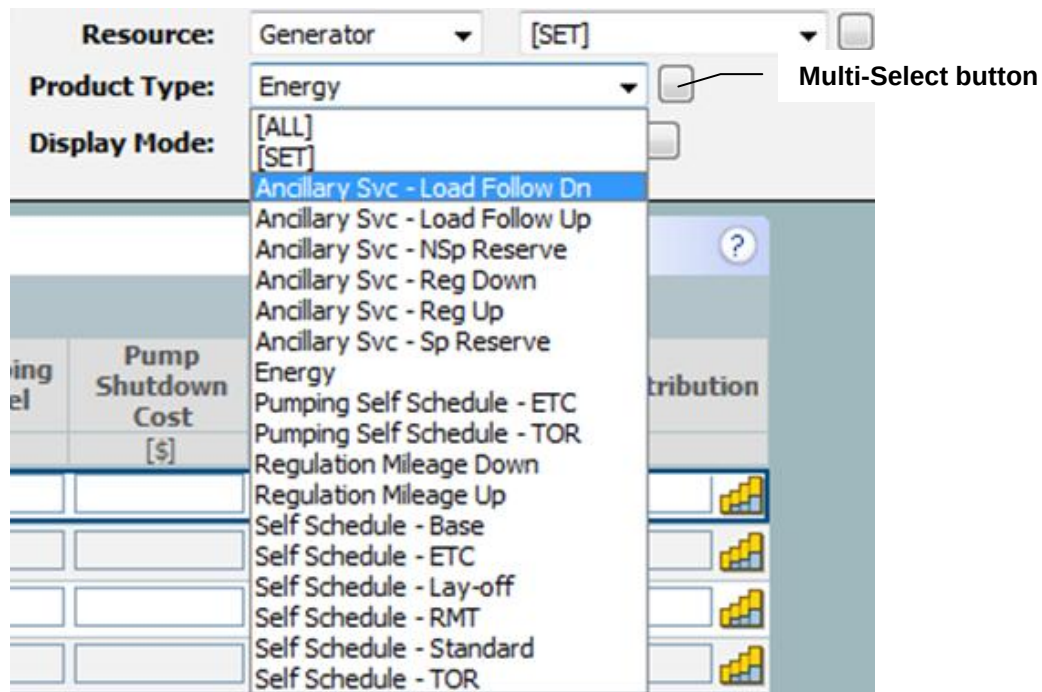
Multi-Select Filter

There are situations in which a user may need to make either one or more selection(s) from a list of possibilities. In such cases, the SIBR UI uses something called a Multi-Select filter.

At first glance, the multi-select filter looks exactly like the simple select list (Figure 13), with the exception of the Multi-Select button.

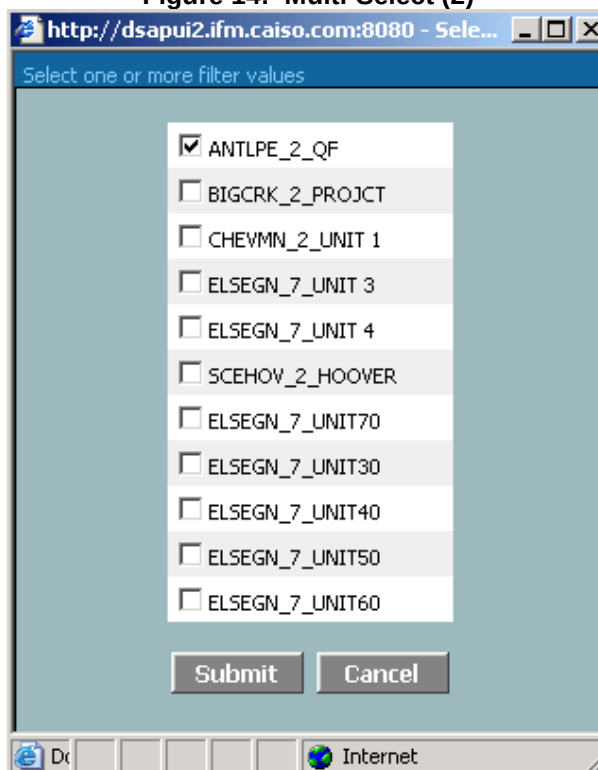
(next page)

Figure 13: Multi-Select (1)



When the Multi-Select button is clicked, a pop-up appears with a list of possible selections (Figure 14).

Figure 14: Multi-Select (2)

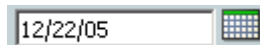


To select multiple items, the user clicks the checkbox (es) next to the desired item(s) and then clicks the Submit button. It is also possible to select all items in the list by clicking the Select All link (on certain windows), or to close the window without making any selection by clicking the Cancel button.

Date & Date / Time Picker

Another filter type allows the user to select a date (or a date and a time). On the filter pane, this filter looks like Figure 15.

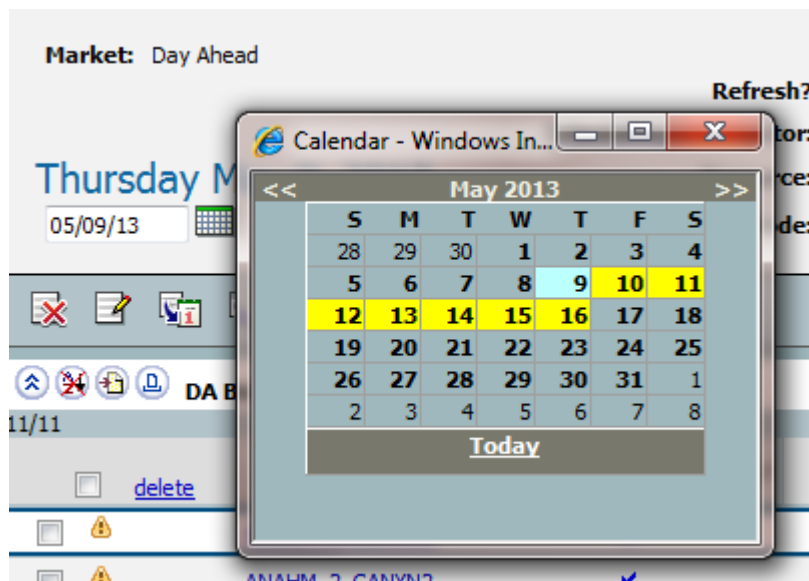
Figure 15: Date Picker (1)



Commonly a default date is shown; some logical date is chosen – typically today's date (or for bid entry screens, the next possible date for which bids may be entered). There are two ways to enter data into this type of filter.

1. Click in the box and enter the data in the same format it is displayed (e.g., for a date: MM/DD/YY).
2. Click on the calendar icon to the right of the box. This exposes a calendar like that shown in Figure 16. Click on the desired date – the window closes and the selected date appear in the box. The >> and << icons on the calendar may be used to navigate to the next and previous month. The **Today** link at the bottom of the calendar selects today's date.

Figure 16: Date Picker (2)



Checkboxes

In cases where a filter choice has an ON/OFF or YES/NO answer, a simple checkbox may be used in the filter pane.

Figure 17: Checkbox

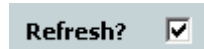
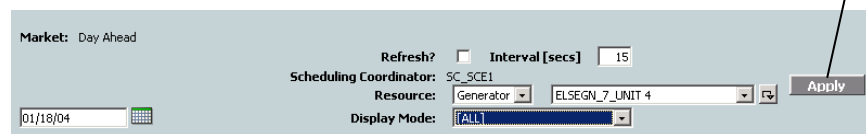


Figure 17 illustrates such a filter, in this case a switch that turns on (off) automatic screen refresh.

Applying Filters

The filter pane has an Apply button that applies filters; filters do not take effect until the Apply button is clicked. The button text will read “Refresh” and simply refresh the page until some filter choice is made. After a filter choice is made the button text changes to “Apply”. Clicking the button applies the filter, causing the screen to repaint with the filtered data.

Apply Button



NOTE: Filters do not take effect until the Apply button is clicked.

2.2.2 Data Grid

The most noticeable and largest component of most displays is the data grid; for tabular displays, the data grid occupies the majority of the Application content area. It is possible that a page may have more than one data grid. It is also possible that the content area may contain one or more charts in addition to the data grid(s), and it may also contain various control elements like buttons, checkboxes, etc.

Data Grid Controls

DA Bid Summary					
	Resource	DAILY	EN	SS-STD	
☐	ANTLPE 2_QF	✓	add	✓	
☐	ELSEGN 7_UNIT40	✓	add	✓	
☐	ELSEGN 7_UNIT50	✓	add	✓	
☐	SCF1_SVMAB 2_LDWB_FNE	add	add	add	

Controls on the Grid

A number of icons may be included at the upper left corner of the data grid. Table 1 describes the buttons that are available on tabular grids.

Table 1: Buttons On Tabular Grids

	Collapse / Restore grid. This button collapses (restores) a tabular grid. When a grid is collapsed, the title of the grid remains visible.
	Restore Default Sort. It is possible to change the sort order of the contents of a tabular display by clicking on the title row. Clicking on the Restore Default Sort button restores the sort order to the default, that is, it removes any sorting that has been established by clicking on title rows.
	Advanced Filter. Clicking on this button opens a separate window containing a query builder that can be used to perform advanced filtering.
	Export. By clicking on this button, the user may export grid contents (either displayed contents or the entire contents of the database table(s) used to populate the grid) to Microsoft Excel, Microsoft Word, or an XML file. Note that a configuration parameter controls the maximum number of rows that may be exported. This number is quite large; it is rare that tables exceed this size.
	Print. This button prints the contents of the grid. Note that there is another print button in the “common functions” area of the display. That button prints the contents of the entire display.

Sorting the Grid

The sort order of a tabular grid is established in the configuration file for that grid. The User may change the sort order by clicking on the title row for a column. For example, in the grid illustrated in Figure 18, the user has clicked once on the Minimum Load: Minimum Cost header and twice on the Energy Limits: Max header. This changes the sort order of the grid by making the Minimum Cost column the primary sort key and Max the secondary sort key. A small triangle appears in the header row to indicate:

Sort Triangle



Sort Key

- Sort order. The orientation of the triangle (pointing up means ascending, pointing down means descending).
- Key: The small number in the triangle indicates which column is the first, second, etc. sort key. Up to 9 sort keys may be established in this way.

As implied above, sorting may be ascending, descending, or none:

- Clicking once sorts in ascending order.
- Clicking a second time on the same column changes the order to descending.
- Clicking on the same column for a third time removes sorting.

By clicking on the grid's Restore Default Sort button, all sort keys can be removed and the sort order returned to default.

Figure 18: Controlling Sort Order

Restore
Default Sort

Figure 18: Controlling Sort Order

Daily Bid Components

?

Clear

Cancel

Update

Startup		Minimum Load		Ramp Rates			Energy Limits		Block Bid Hours
Time Curve	Cost Curve	Min Cost	Pumping Cost	Operational	Op. Reserve	Regulating	Min	Max	
		1						2	
		[\$]	[\$]		[MWh]	[MWh]	[MWh]	[MWh]	

First sort key.
(Ascending)

Second sort key.
(Descending)

Scrolling the Grid

Often the data grid of a tabular display is not large enough to display all the data in the corresponding columns of the database. In such a case, the grid may be configured to be "scrolled".

Scrolled Grid

Some tabular grids may be configured for scrolling. In such a case, a scroll bar will be present on the right edge of the grid. This scroll bar is

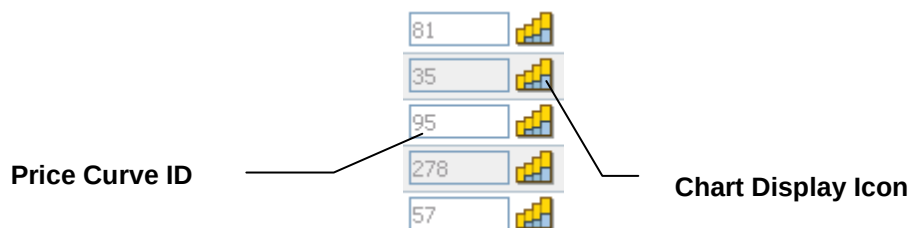
Curve Data

used to move forward and back in the data. Note that column headers and totals (if present) remain stationary as data are scrolled.

Some types of resources have associated “curve data”. An example is the price curve data associated with a generator resource. Cells associated with curve data contain an icon; the icon is a link to another display that will appear when the icon is clicked. For example, Figure 19 illustrates a portion of a Price Curve column that is found on a bid data entry display. There are two pieces of information in each row:

- Price Curve ID: Price curves are stored in the database. Rather than require the user to re-enter a great deal of duplicate price curve data, the user interface allows the user to select a price curve that is already in the database. The Price Curve ID is the unique identifier for a price curve that has been saved.
- Icon (): The bar chart icon is a link; clicking on the icon exposes a new window containing a grid that displays and allows entry and editing of curve data.

Figure 19: Icons In Grid

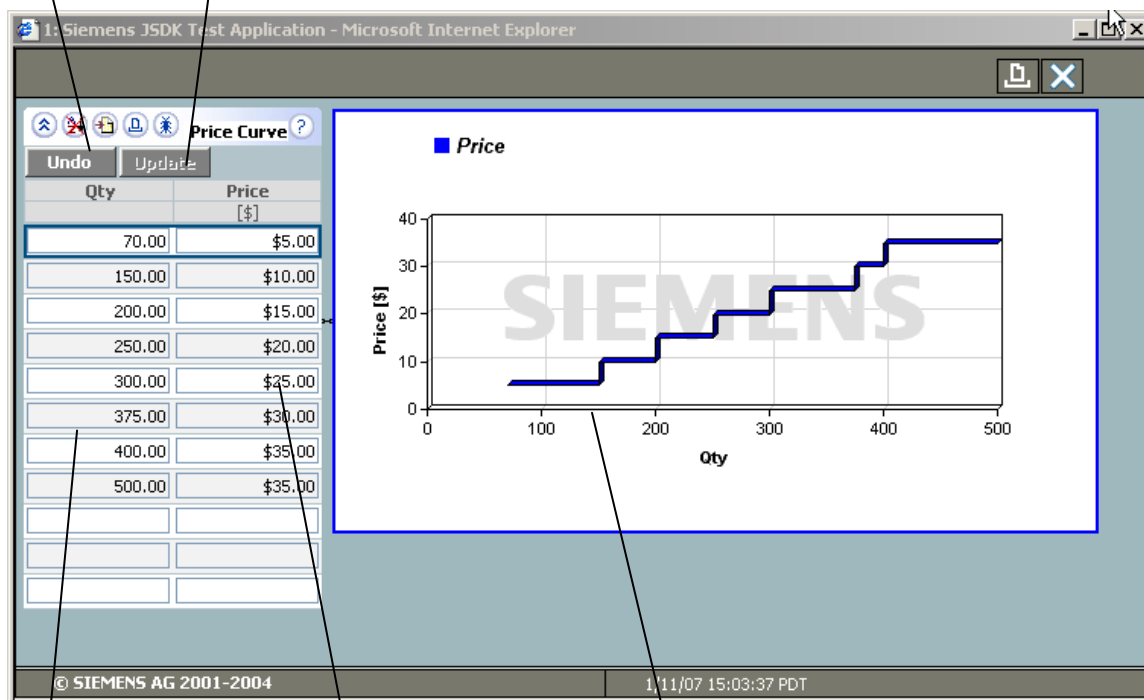


Clicking on the icon opens a new window (Figure 20) in a new web browser instance.

Figure 20: Entering Curve Data

Undo Button

Update Button



Price

Chart

Quantity

 California ISO Shaping a Renewed Future	SIBR – Scheduling Coordinator Users Guide	Version: 5.0 Date: 11/4/2014
--	--	---

The grid in this display contains curve information – in this example quantity (MW) and price (\$). This type of display is used for initial entry of new curve data. Important components of this display are:

- **Cancel Button:** Cancels data entry. (But does not delete any data that may have been entered and saved previously.)
- **Update Button:** Saves data to the database.
- **Chart:** Provides a graphical view of curve data.

Message Area

The area immediately below the grid is used for messages. This area expands and shrinks as necessary to accommodate any messages that the application believes are of interest to the user. Figure 21 illustrates several messages, in this case informative messages related to the updating and sorting of data in a table. The messages that appear in this area are related to actions that the user has recently taken (e.g., applying a filter, incorrectly typing an alphabetic character in a numeric field, clicking the Save button, etc.) A separate display is provided to view messages that have occurred over a longer term, such as messages issued by the Rules Engine during bid processing.

Figure 21: Messages



Input Accelerators

There are two distinct methods of input acceleration on data tables. Both methods allow you to quickly and easily replicate duplicate data on a table. This is accomplished either by using pre-defined hotkey commands or by using the right-click menu.

- **Hot Keys:** When you want to copy the data from the current cell into all of the cells above or below, using the Alt + Up or Alt + Down commands is a fast way to do just that.

Alt + Up/Down Commands



- **Right-Click Menu:** This menu gives you a list of commands associated with actions to perform on the entered data. Each of the functions is described in detail below.
 - **Copy/Mark:** Copies or marks the contents of the selected cell or row
 - **Paste Row:** Pastes the copied row into the currently selected row
 - **Paste Row Through:** Pastes the copied row into all the rows up or down through the selected row

- Paste Cell: Pastes the copied cell into the currently selected cell
- Paste Cell Through: Pastes the copied cell into all the cells up or down through the selected cell
- Sum from Marked Cell: Sums up the values from the marked cell through the selected cell and displays the results as a message in the message area

Right-Click Menu

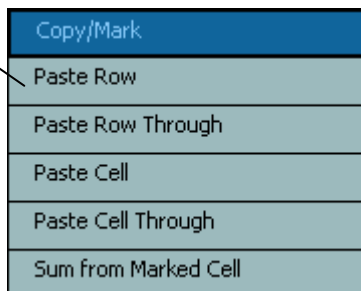


Figure 22: Input Accelerators

Hourly Bid Components

	HR	Resource Name	RUC Price [\$]	RUC Quantity	Self- Provision [MWh]	Pumping Level	Price Curve	Distribution	NERC Tag	Pre-dispatch indicator
clear	01	ANTLPE_2_QF	23	10	6				23	☐
clear		CHEVMN_2_UNIT 1	43	10	6				23	☐
clear		ELSEGN_7_UNIT40	54	10					23	☐
clear		ELSEGN_7_UNIT60	32	10					23	☐
clear		ELSEGN_7_UNIT50	36	10					23	☐
clear		ELSEGN_7_UNIT70	12	10					23	☐
clear	02	ANTLPE_2_QF	23	10					23	☐
clear		CHEVMN_2_UNIT 1	43	10					23	☐
clear		ELSEGN_7_UNIT70	54	10					23	☐
clear		ELSEGN_7_UNIT60	32	10					23	☐
clear		ELSEGN_7_UNIT50	36	10					23	☐
clear		ELSEGN_7_UNIT40	12	10					23	☐
clear	03	ANTLPE_2_QF	23	10					23	☐
clear		ELSEGN_7_UNIT60	43	10					23	☐
clear		ELSEGN_7_UNIT50	54	10					23	☐
clear		CHEVMN_2_UNIT 1	32	10					23	☐

This column data was generated using the Alt + Down command

The Right-Click menu is being used to copy the contents of this cell

[clear](#) ELSEGN_7_UNIT50 54 10 23

10+10+10+10+10+10 = 60

© SIEMENS AG 2001-2004 1014 | Edit | -1 | dsapui2:8080 | sibrd4 1/19/06 11:12:58 PST

Done Internet

Sum from Marked Cell results displayed as a message

3 Bids

Overview

This section will show the user how to view bid status, how to create new bids based on existing bids, cancel bids, and so forth. A step-by-step walkthrough of the bid entry process is included at the end of this chapter.

The CAISO SIBR system accepts two kinds of bids:

- **Day-Ahead bids:** A day-ahead bid is submitted for a resource for a 24-hour market period. Day-ahead bids may be submitted for up to 7 days in the future. Day-ahead bids must be submitted prior to market close for the target day.
- **Note (Convergence Bids are Day-Ahead only)**
- **Real-Time bids:** Real-time bids are submitted for one-hour periods for one target day. Although real-time bids are for one-hour periods, the user interface bid entry screens are designed to permit up to 24 (25 on a long day, 23 on a short) day-ahead bids to be entered on a single screen.

Bid data is entered on either the Day-Ahead or Real-Time pages. Day-Ahead and Real-Time pages look and behave very much alike, the major difference being that a Real-Time bid requires that certain data be provided for each hour of the target day.

For both Day-Ahead and Real-Time bids, there are two categories of data that must be entered:

- **Daily Components:** These are parameters that are associated with the resource for the trade day, not with an individual market or hourly intervals of the bid.
- **Hourly Components:** These are parameters that may vary from one hour to the next through the market period.

To minimize the amount of data entry, separate screens are supplied for entry of the two types of data; this is true for both Day-Ahead and Real-Time bids.

3.1 Day-Ahead Bids

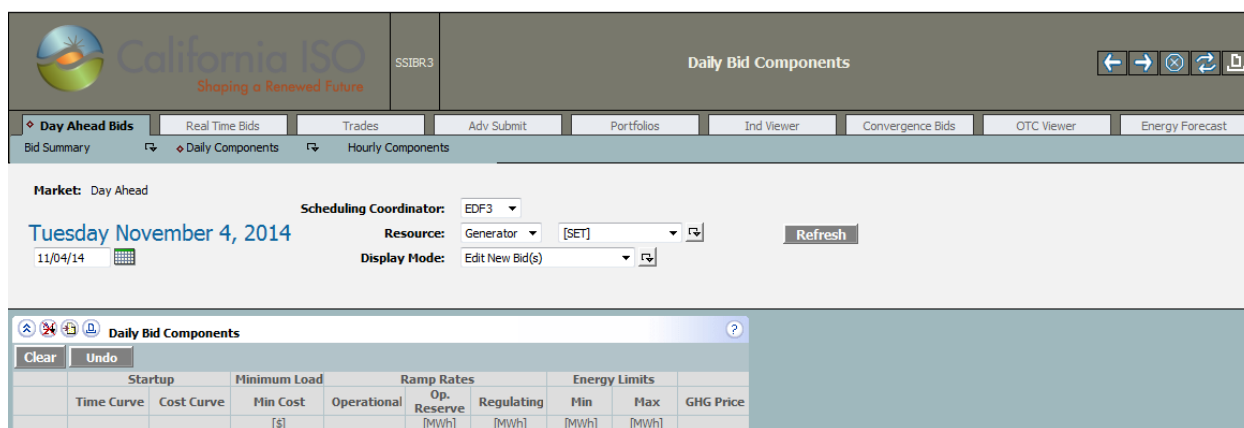
Bids for a Day-Ahead Market are submitted for a full 24-hour period and may be submitted up to 7 days ahead of the target market date. Bids may be for energy or ancillary services. Data required for Day-Ahead bids are divided into two broad categories:

- Daily Components: These apply to the entire trade day. Using a generator resource as an example.
- Hourly Components: These may be different for each hour of the bid period.

Figure 23 illustrates the display used for entering and viewing daily components. The exact contents of this display will vary, depending upon the type of resource. Using a generator resource as an example, these include:

- Startup information (cost curve, time curve)
- Minimum Load information.
- Ramp Rate information.
- Minimum and Maximum Energy Limit information.
- GHG Price (for EIM Participating Resource)

Figure 23: Daily Components Page

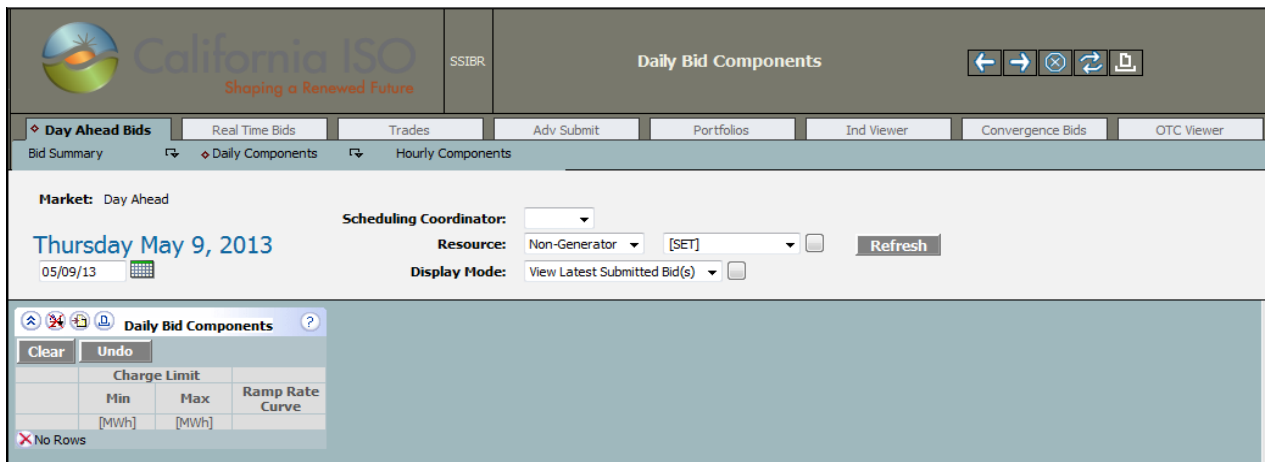


Startup		Minimum Load		Ramp Rates		Energy Limits		
Time Curve	Cost Curve	Min Cost	Operational	Op. Reserve	Regulating	Min	Max	GHG Price
		[\$]		[MWh]	[MWh]	[MWh]	[MWh]	

Figure 23.2 illustrates the display used for entering and viewing daily components. Using a Non - Generator resource as an example, these include:

- Charge Limit (Min, Max)
- Ramp Rate information.

Figure 23.2: Daily Components Page

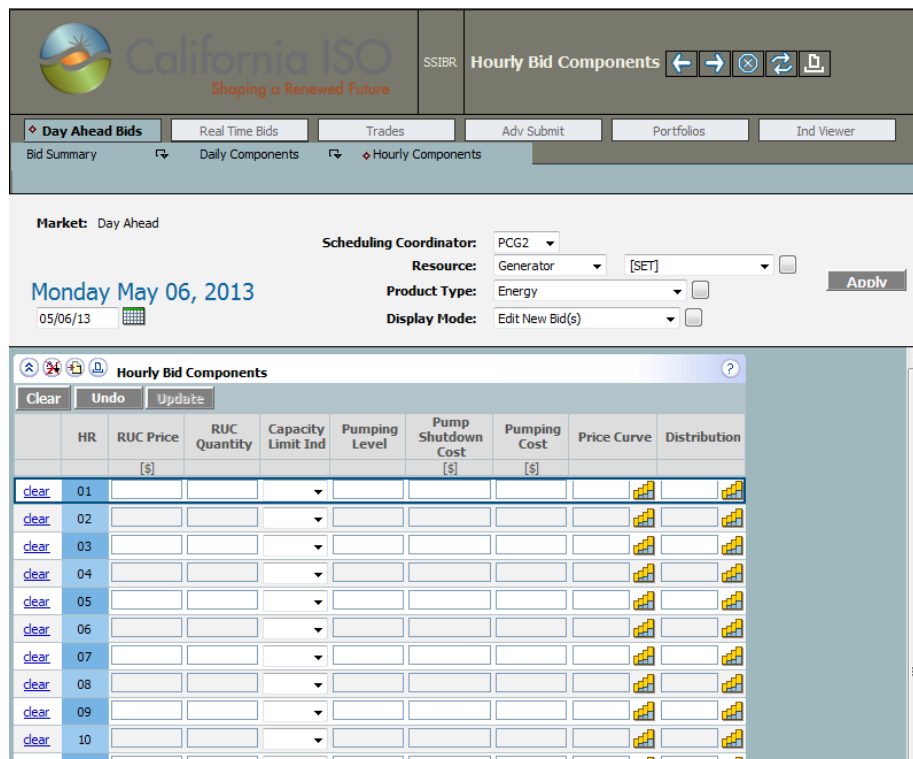


Hourly Components may be different for each hour of the bid period. Figure 24 illustrates the display used to enter and view hourly components. Again, we use a generator resource as an example. As with daily components, the exact columns may vary depending upon the type of resource (Generator, Inter-Tie, Load, MSG or Non-Generator).

In our (generator) example for Energy, they include:

- RUC price
- RUC quantity
- Capacity Limit Ind
- Pumping Level
- Pump Shutdown Cost
- Pumping Cost
- Price curve
- Distribution curve (for a generating resource that consists of multiple individual generators – Aggregate Resource)

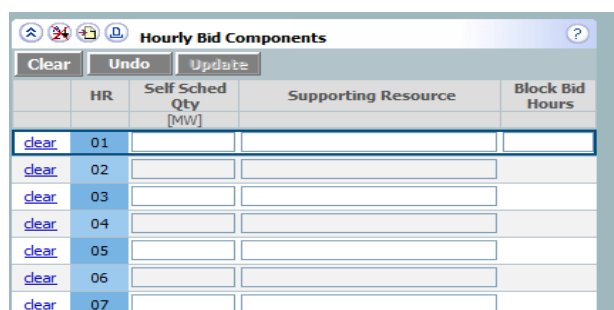
Figure 24: Hourly Components Page (Generator, Energy)



The screenshot shows the 'Hourly Bid Components' page in the SIBR system. The top navigation bar includes 'Day Ahead Bids', 'Real Time Bids', 'Trades', 'Adv Submit', 'Portfolios', and 'Ind Viewer'. The 'Day Ahead Bids' section is active, showing 'Bid Summary', 'Daily Components', and 'Hourly Components'. The 'Market' is set to 'Day Ahead'. The 'Scheduling Coordinator' is 'PCG2'. The 'Resource' is 'Generator' and the 'Product Type' is 'Energy'. The 'Display Mode' is 'Edit New Bid(s)'. The date is 'Monday May 06, 2013' (05/06/13). The main table has columns: HR, RUC Price (\$), RUC Quantity, Capacity Limit Ind, Pumping Level, Pump Shutdown Cost (\$), Pumping Cost (\$), Price Curve, and Distribution. The table shows 10 rows of hourly data, each with a 'clear' link and a small bar chart icon.

In the Hourly Components of the Inter-Tie Self Schedule – Standard you will see a different set of Components. There is functionality for Export Resources that are Self-Scheduling; a field is available for (Supporting Resource). Figure 25 illustrates this display. An Export may supply any valid Generating Resource to act as a Supporting Resource in order to be eligible for Export Priority. (See Market Instruments BPM for further details on Export Priority, Section 5.2.2.4 “Process for Exports to obtain PT Status”).

Figure 25: Hourly Components Page (Inter-Tie, Self Schedule)



The screenshot shows the 'Hourly Bid Components' page for the Inter-Tie Self Schedule. The top navigation bar is the same as Figure 24. The 'Day Ahead Bids' section is active. The 'Market' is set to 'Day Ahead'. The 'Scheduling Coordinator' is 'PCG2'. The 'Resource' is 'Generator' and the 'Product Type' is 'Energy'. The 'Display Mode' is 'Edit New Bid(s)'. The date is 'Monday May 06, 2013' (05/06/13). The main table has columns: HR, Self Sched Qty [MW], Supporting Resource, and Block Bid Hours. The table shows 7 rows of hourly data, each with a 'clear' link and a small bar chart icon.

To minimize the amount of work required to enter a bid, the GUI is structured so that Bid-Level Components are entered only once. Hourly Components are entered on a separate page, with one set of values per hour; input accelerator tricks are provided to allow rapid copy / paste of values for multiple hours. (Refer to the Input Accelerators section on page 29.)

Navigating To Day-Ahead Bid Entry Displays

To navigate to the Day-Ahead bid entry displays:

- On the application menu, click Day Ahead.
- Select the desired display:
 - If you wish to enter Daily Bid Components, click Daily Components on the menu.
 - If you wish to enter Hourly Components, click Hourly Components on the menu.
 - If you wish to enter Hourly Display, click Hourly Display on the menu. (for Interties - Wheeling, Dispatch Option, and for Generators - Gen Capacity Limit)
 - If you wish to review, submit, or cancel bids, click Bid Summary on the menu.

Filters on the Day-Ahead Display

The Day-Ahead page contains a number of filters immediately below the menu. Filters on the Daily Components Page are:

- **Date Picker:** This is used to select the market date for which this bid will apply. By default, the system assumes the bid will be for the next available trading period. If you wish to enter a bid for some other date, use the Date Picker to select (or enter) the desired date. Remember that Day-Ahead bids may be submitted for a maximum of seven days in the future.
- **Resource:** This filter allows you to select the type of resource for which you wish to enter bid data. Valid types are:
 - Generator
 - Intertie
 - Load
 - MSG
 - Non-Generator

- **Resource Name:** This filter allows you to select the resource name(s) for which you wish to enter bid data. Note that this is a multi-select filter; it is possible to select multiple resources.

The selections shown depend upon the selection chosen with the Resource Type filter. If, for example, Resource Type is “Generator”, a list of generators will be shown.

- **Display Mode:** This filter is used to filter out the displayed bids based on their status. Typical modes are display all bids, display new/editable bids, or display submitted bids.

Remember that filters do not take effect until the Apply button is pressed.

Data Grid

The data grid occupies the lower portion of the page; it contains whatever data has been specified through manipulating the filters described above:

- For bids that have been submitted, it can display data from those bids.
- For bids that have been partially created and saved, it can be used to display data that has been saved in the “scratchpad” area of the database, and it permits entry of additional data.
- For bids that have been saved as “favorites” (templates), it provides mechanisms for retrieving those templates and making whatever changes are required to create a bid for submission.
- It also provides a mechanism for creating and saving completely new bids.

The size and shape of the data grid changes depending upon filter options. For example, if the user makes filter selections for entering a bid for a generator, only those columns related to a generator bid will be shown. If the user makes filter selections for entering a bid for an inter-tie, a different set of columns will be shown.

3.2 Real-Time Bids

The process of entering and managing Real-Time bids is very similar to that described previously for Day-Ahead bids. The major difference is that Real-Time bids are for one-hour periods while Day-Ahead bids are for 24-hour periods. As with Day-Ahead bids, a Real-Time bid consists of Daily and Hourly components. However, if daily components have already been submitted for a resource with its bid in the day-ahead market, they do not need to be submitted again for that resource in the real-time market. Also like Day-Ahead bids, the actual columns shown may vary, depending upon the type of resource.

Figure 26 is a portion of the Hourly Components page for a Real-Time (generator) bid. Note that the data entry grid has one row for each hour. For Real-Time bid entry, the input accelerators are especially helpful; they allow rapid copy and paste of data. (Refer to page 29 for information on Input Accelerators) Note that, even though it may “feel” like you are entering one bid for multiple hours, you are really creating multiple bids. For example, if you completely fill in 24 rows on the Real-Time bid entry pages, you have created 24 separate bids.

The Real-Time Hourly Components page is also very similar to its Day-Ahead analog. Again, the major difference is that there is one row per hour.



Figure 26: Real-Time Bid -- Hourly Components Page

0:Hourly Bid Components - Windows Internet Explorer

California ISO
Shaping a Renewed Future

SSIBR

Hourly Bid Components

Day Ahead Bids | **Real Time Bids** | Trades | Adv Submit | Portfolios | Ind Viewer | Convergence Bids

Bid Summary | Daily Components | Hourly Components

Market: Real Time

Scheduling Coordinator: PCG2

Resource: Generator [SET]

Product Type: Energy

Display Mode: Edit New Bid(s)

Hour: [ALL]

Apply

Saturday May 04, 2013
05/04/13

Hourly Bid Components

Clear | Undo | Update

	HR	Pumping Level	Pump Shutdown Cost [s]	Pumping Cost [s]	Price Curve	Distribution
clear	01					
clear	02					
clear	03					
clear	04					
clear	05					
clear	06					
clear	07					
clear	08					
clear	09					
clear	10					
clear	11					
clear	12					
clear	13					

© SIEMENS AG 2001-2004

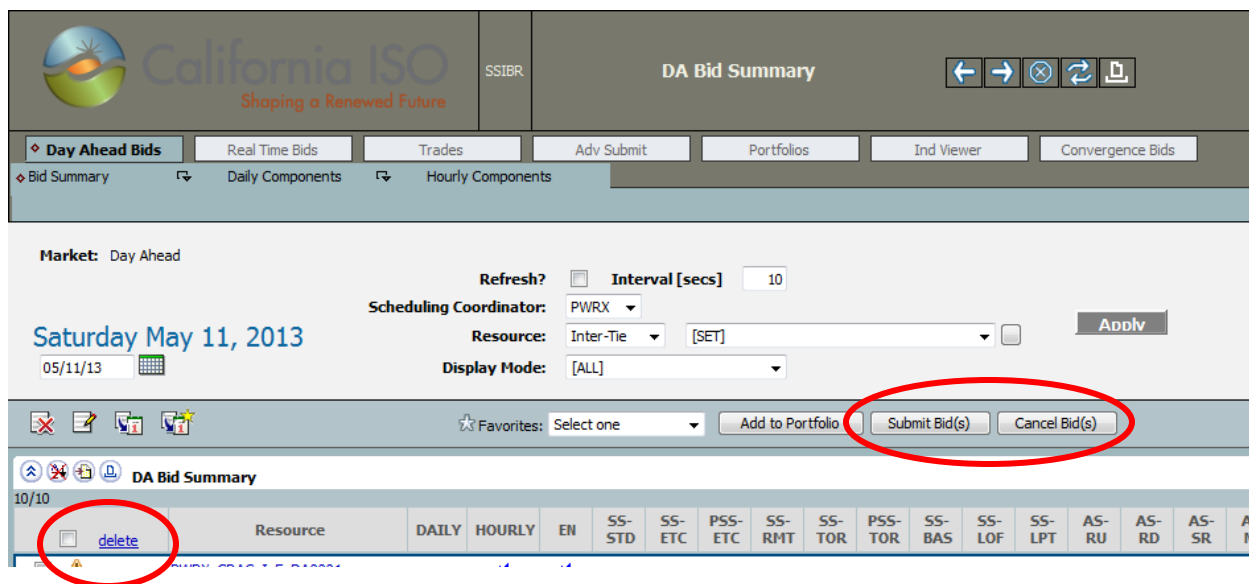
1 | 5/3/13 15:05:32 PDT

3.3 Submitting or Canceling Bids

The bid submission process is largely identical for both Day-Ahead and Real-Time bids. As we have discussed before, the only major difference is that Day-Ahead bids are for a full day and Real-Time bids are for a one-hour period. For both Day-Ahead and Real-Time bids, a Bid Summary menu item is provided; this display is used to review, submit, or cancel bids.

Note: Cancel Bids is for Market Accepted bids, (Conditionally Modified / Modified or Conditionally Valid / Valid or MF Inserted).

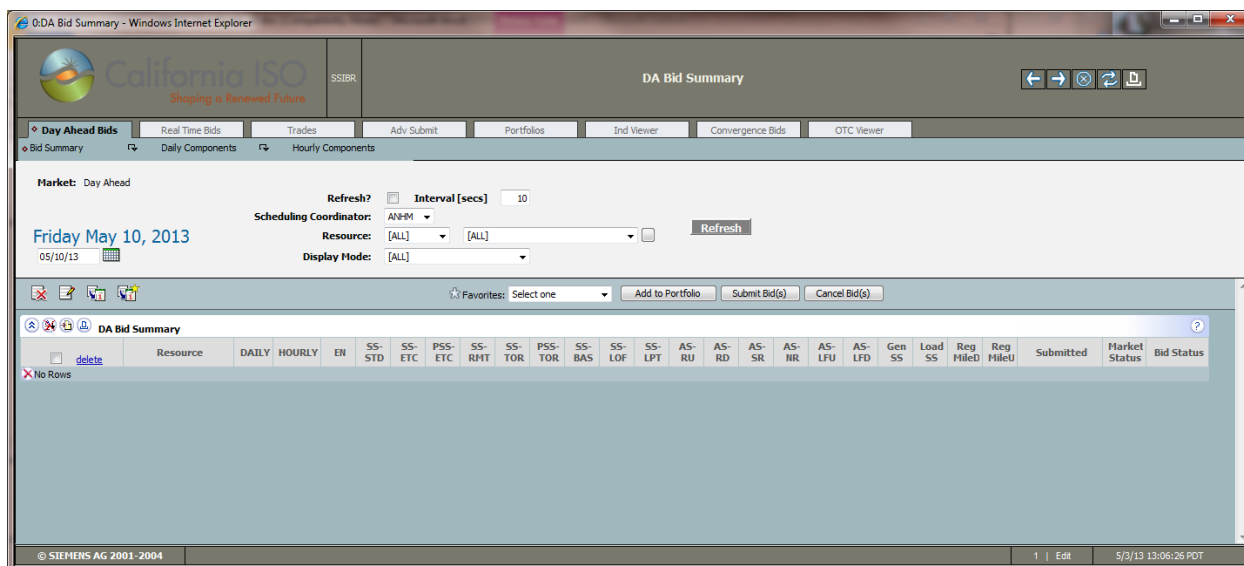
To remove created bids or Invalid/Rejected bids, select bid, then Delete.



3.3.1 Bid Summary Display

The Summary display (illustrated in Figure 25) is the page that is used to review, cancel, or submit bids that have been entered and saved into the system database. As described previously, the displays used for Day-Ahead and Real-Time bids are essentially identical; submitting and canceling bids works the same for both, the only visible difference being that Day-Ahead bids are for daylong periods and Hour-Ahead bids are for hour-long periods.

Figure 25: Bid Summary Display (Day-Ahead)



DA Bid Summary

Market: Day Ahead

Refresh? ☐ Interval [secs] 10

Scheduling Coordinator: ANM

Resource: [ALL] [ALL] Refresh

Display Mode: [ALL]

Friday May 10, 2013
05/10/13

Favorites: Select one Add to Portfolio Submit Bid(s) Cancel Bid(s)

Resource	DAILY	HOURLY	EN	SS-STD	SS-ETC	PSS-ETC	SS-RMT	SS-TOR	PSS-TOR	SS-BAS	SS-LOF	SS-LPT	AS-RU	AS-RD	AS-SR	AS-IR	AS-LFU	AS-LFD	Gen SS	Load SS	Reg MileD	Reg MileU	Submitted	Market Status	Bid Status
No Rows																									

© SIEMENS AG 2001-2004 1 | Edit 5/3/13 13:06:26 PDT

Like other displays, this contains a filter pane, a data grid, and some controls. For this display:

- A filter is provided to allow the user to select the date for which data are to be displayed.
- A second filter allows the user to specify bid status. This is a multi-select filter that allows the user to select which bids are to be displayed. In the example shown, the only bids that exist for the chosen date are in the “Created” state.

The data grid has a somewhat different appearance than those that we have discussed previously:

- Each row is for one resource / MSG configuration / one time period. (For Day-Ahead bids, this means one row per resource, unless the resource is a MSG, then each configuration has a row. For Real-Time bids, this means there may be multiple rows for each resource – one row per hour.)
- To the left of the resource name is a checkbox. Click on this box to select a bid to be submitted (or cancelled or deleted).
- To view details of the bid, click on a cell in the grid. This will open a display with details. For example:
 - To see hourly bid components, click on the resource name. Clicking on any of the individual bid component columns will also display hourly bid components (e.g., in the “EN”, “SS-STD”, etc. columns).
 - To see daily bid components, click in the “Daily” column (to the right of the resource name).
- The rightmost column indicates the status of the bid.
- The remaining columns indicate whether data has been entered for the various components of the bid. For example, if a checkmark appears in the “Daily” column, this means that *some* data has been entered for daily bid components. NOTE: The system has no way to determine if *all* data has been entered; the checkmark simply indicates that some data has been entered. Similarly, the “En” column indicates whether some data components have been entered for an energy bid, etc.

The display has two buttons:

 California ISO Shaping a Renewed Future	SIBR – Scheduling Coordinator Users Guide	Version: 5.0 Date: 11/4/2014
--	--	---

- **Submit Bids button:** Submits the selected bids (i.e., those for which the checkbox in the corresponding row have been checked.)
- **Cancel Bids button:** Cancels the selected bids (i.e., those for which the checkbox in the corresponding row have been checked.)

In addition, a single checkbox at the far left of the title row of the data grid (i.e., upper left) can be used to select all rows – this shortcut makes it unnecessary to click on the checkbox in every row.

To Submit Bids...

As described above, the checkboxes in the various columns for a particular resource indicate whether bid information has been entered for each product associated with the resource. (Note that not all products are required to have bids.) Use this summary information to determine if the bid information has been entered. Click on the resource name or elsewhere on a row to see details.

If the bid information for a resource is complete, click the checkbox for that resource. Then click the “Submit Bids” button. This will submit all bids for which the checkbox has been checked. If a bid for a resource is already in the system and a new bid is submitted, the new bid will replace the older bid. There is no limit to the number of times a bid for a resource may be submitted; the most recently submitted bid will always be considered by the system, any others will not be considered.

To Cancel Bids...

Click the checkbox for each bid to be canceled. Then click the “Cancel Bids” button. This will remove the bid(s) from consideration by the system.

Note: A bid may not be cancelled for a market that has closed. Bids may only be canceled for markets that are still open and for bids that are not Invalid, rejected or in submit status.

To Delete Bids...

Click the checkbox for each bid to be deleted. Then click the “delete” button. This will remove the bid(s) from the system.

To Copy Bids to New Sheet

This feature allows the user to select a bid (or bids) and copy them to a new sheet. This is useful when you want to copy bids to use on another day or for a set of days in the future. Simply check the box in front of the

 California ISO Shaping a Renewed Future	SIBR – Scheduling Coordinator Users Guide	Version: 5.0 Date: 11/4/2014
--	--	---------------------------------

bid or bids to be copied and click the Copy Bid(s) to New Sheet button. Select the start and end dates to copy the bid to and click OK.

Note: For Daylight Savings (DST) dates, the copy is disabled.

To Copy Bids to Current Sheet

This feature allows the user to copy a bid that has already been submitted to the market (regardless of the returned status) to the current sheet in the created state. This is useful, for example, when a bid comes back with an invalid status and minor modifications can be made to the returned bid to make it acceptable for re-submission. Simply check the box in front of the bid or bids to be copied and click the Copy Bid(s) to Current Sheet button. The bid will be copied to the current sheet in the created state and the user will be taken to the Hourly Components page to make modifications to the bid.

To Edit Bids or See Details...

Editing of bid information is performed on the relevant (i.e., Day-Ahead or Real-Time) page. There are two ways to navigate to the page from the Summary page:

1. Click on the resource name in the grid. This will open the page associated with the bid.
2. Click on the appropriate tab of the menu (either Day-Ahead or Real-Time) and use the filters to select the desired resource, bid date, etc.

After the bid has been modified, return to the Submit page to submit it.

There are two ways to view/edit Bid information from the Bid Summary page:

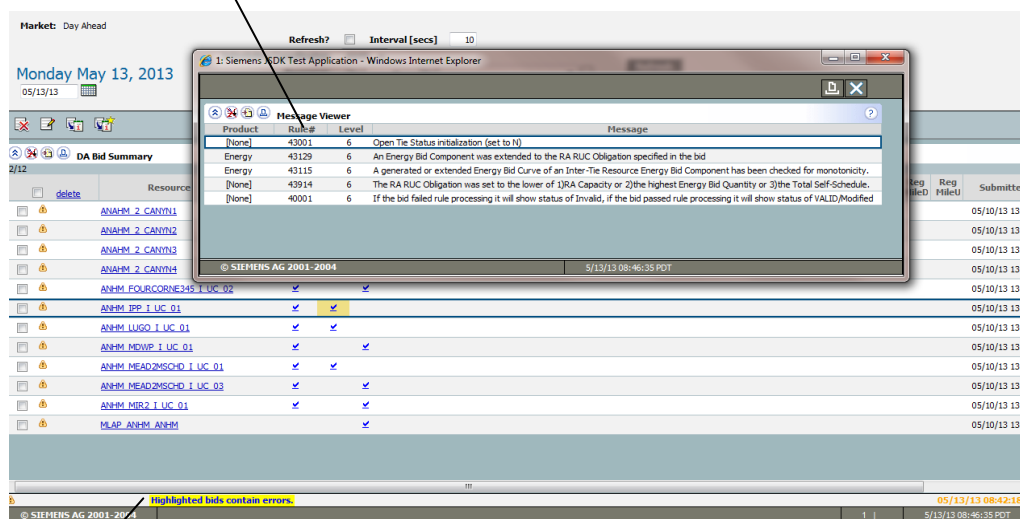
- The [add](#) link in a cell means that there has not been any data entered for that product type. Clicking the [add](#) link will take you to the appropriate table and allow you to *enter* data for that product type.
- The ✓ icon means that there is data entered for that product type. Clicking the ✓ will take you to the appropriate table and allow you to *view and edit* the data for that product type.

Errors and Error Messages

If a bid is submitted and found to have errors, it will come back with an error indicator. When bids are found to have errors they will come back either in an invalid or rejected state or a modified or MF Inserted state. The segment of the bid with errors will be highlighted in yellow. Clicking the error indicator will bring up a window listing the errors (rules) and any processing of the bid to correct them (in the case of a modified bid). Refer to Figure 26 for an example of a bid containing errors.

Message Viewer Window

Figure 26: Bid Containing Errors



Error Indicator

3.4 Bid Entry Walkthrough

This section will take the user step-by-step through the bid entry process. The scenario used in this walkthrough is straightforward and designed to take the user through each of the basic bid-entry steps. Some aspects of the bid-entry process may be left out due to the fact that bids can become very complex.

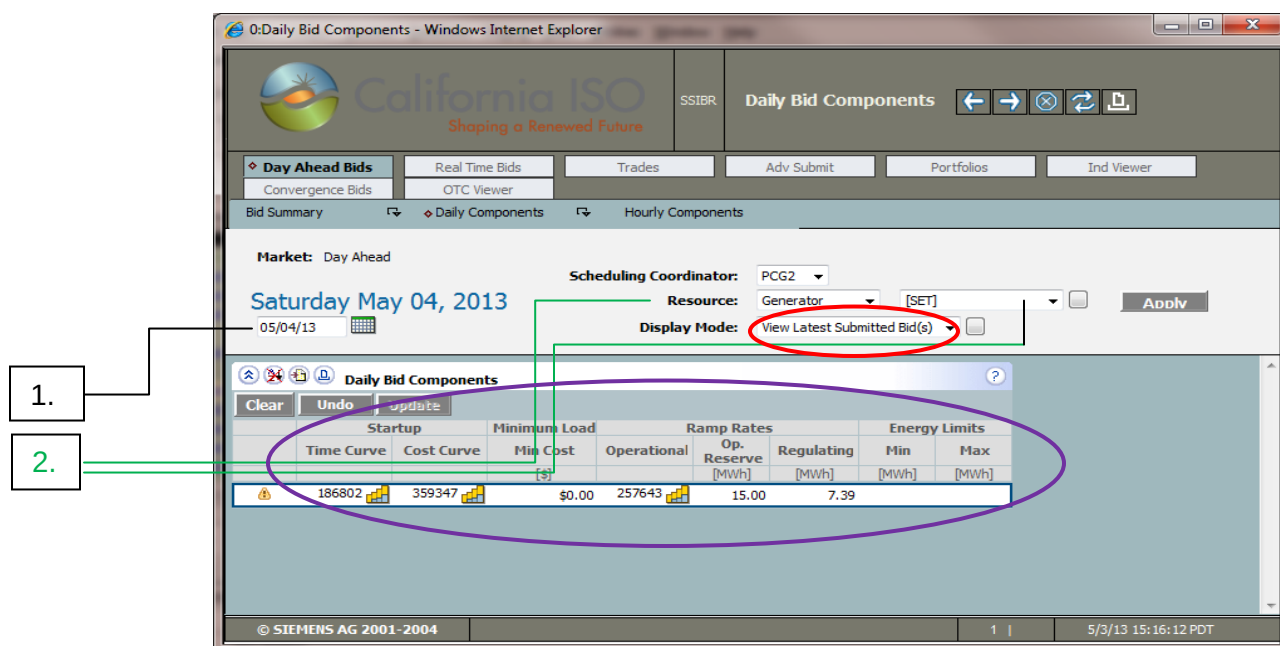
Assuming user is brought to Day-Ahead Bid Summary at login. Click on the Daily Components tab to bring up the Daily Bid Components display.

Step 1: Daily Components

1. Select appropriate date for bid
2. Select resource type and resource name
3. Be sure Display Mode is set to display the bids you want
4. Enter necessary Daily Component values.

Note: Be sure to click Update to save changes.

Figure 27: Bid Entry (1)



0:Daily Bid Components - Windows Internet Explorer

California ISO
Shaping a Renewed Future

SSIBR Daily Bid Components

Day Ahead Bids Real Time Bids Trades Adv Submit Portfolios Ind Viewer

Convergence Bids OTC Viewer

Bid Summary Daily Components Hourly Components

Market: Day Ahead

Scheduling Coordinator: PCG2

Resource: Generator [SET]

Display Mode: View Latest Submitted Bid(s)

Apply

05/04/13

1.

2.

Daily Bid Components

Clear Undo Update

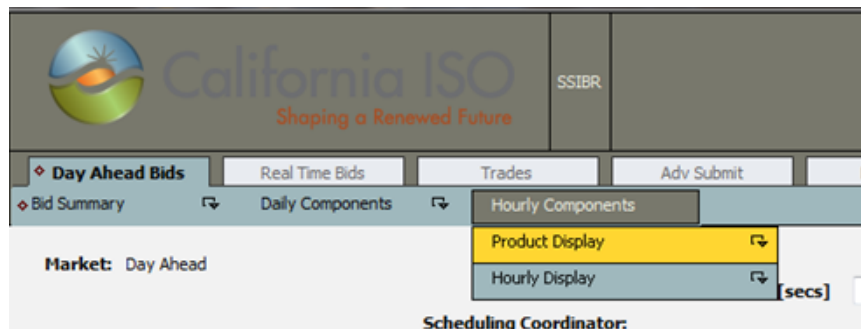
Startup	Minimum Load	Ramp Rates	Energy Limits
Time Curve	Cost Curve	Op. Reserve	Regulating
Min Cost	Operational	Min	Max
[\$]	[MWh]	[MWh]	[MWh]
186802	359347	\$0.00	257643
		15.00	7.39

© SIEMENS AG 2001-2004

1 | 5/3/13 15:16:12 PDT

Step 2: Hourly Components

Once all Daily Components have been entered, click Hourly Components / Product Display to begin entering Hourly Bid Components.



1. Select resource type and resource name
2. Select product type(s)
3. Enter necessary Hourly Component values.

Note: Be sure to click Update to save changes.

Figure 28: Bid Entry (2)

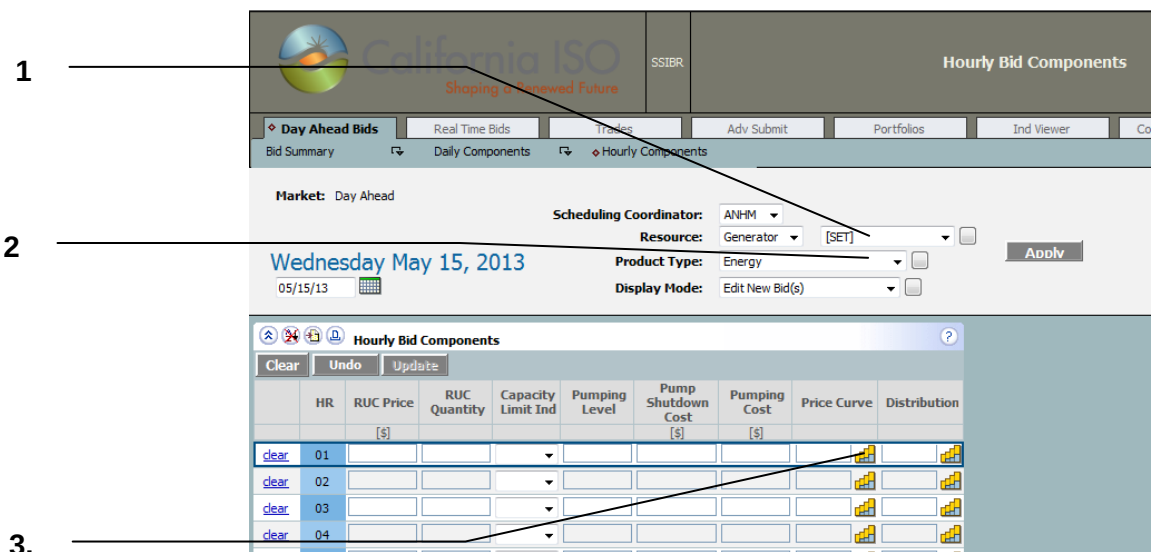
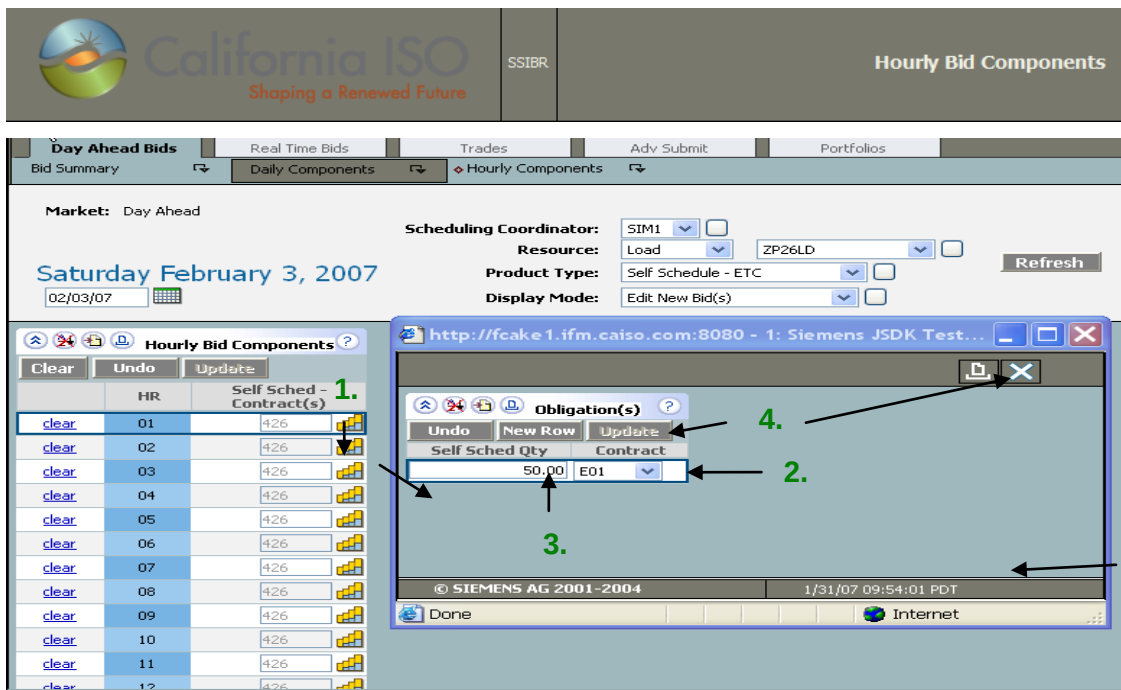


Figure 30: Bid Entry (ETC)



The screenshot shows the California ISO SIBR interface. The main window is titled 'Hourly Bid Components' and displays a table with columns 'HR' and 'Self Sched - Contract(s)'. The table lists hours from 01 to 12, each with a 'clear' button and a '426' value. A pop-up window titled 'Obligation(s)' is open, showing a table with columns 'Self Sched Qty' and 'Contract'. The table has one row with '50,00' and 'E01'. The pop-up window has buttons for 'Undo', 'New Row', 'Update', and 'X'. Arrows indicate the sequence of steps: 1. Click on graphic to open up Contract entry pop-up box, 2. Select Contract Reference from drop down box, 3. Enter quantity, 4. Click Update to save selections and select X to close pop-up box.

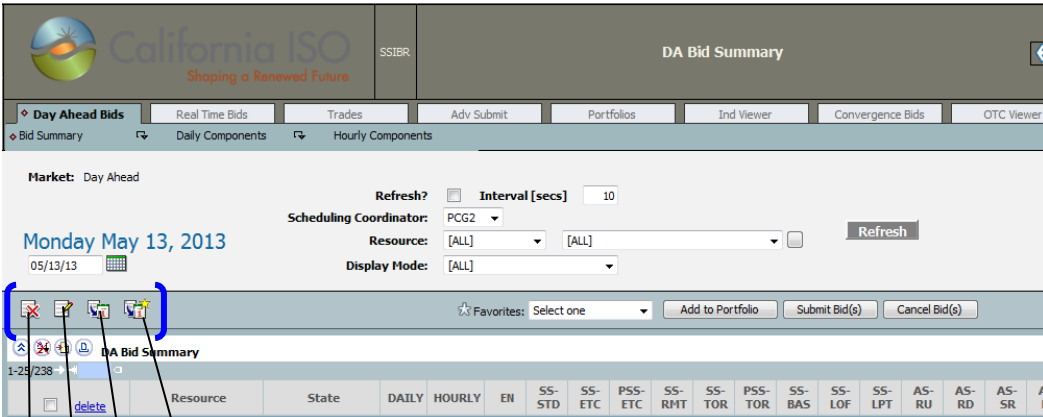
1. Click on graphic to open up Contract entry pop-up box
2. Select Contract Reference from drop down box
(This will display all associated CRNs, to include Chains for the specified Resource)
3. Enter quantity
4. Click Update to save selections and select X to close pop-up box

Step 3: Bid Summary

Once all Hourly Components have been entered, click Bid Summary to review, edit, and submit the bid.

1. Review details of your bid
2. Click on any of the [add](#) links to add additional bid info
3. Click on any of the ✓ to view/edit entered data
4. Now you can choose to:
 -  Cancel Market day(s) bid(s)
 -  Edit selected bid(s)
 -  Copy selected bid(s) to new sheet
 -  Submit selected bid(s) to new date(s)

Figure 29: Bid Entry (3)



Market: Day Ahead

Monday May 13, 2013

05/13/13

Refresh? ☐ Interval [secs] 10

Scheduling Coordinator: PCG2

Resource: [ALL] [ALL]

Display Mode: [ALL]

Refresh

Cancel Market day(s) bid(s)

Edit selected

Copy selected bid(s) to

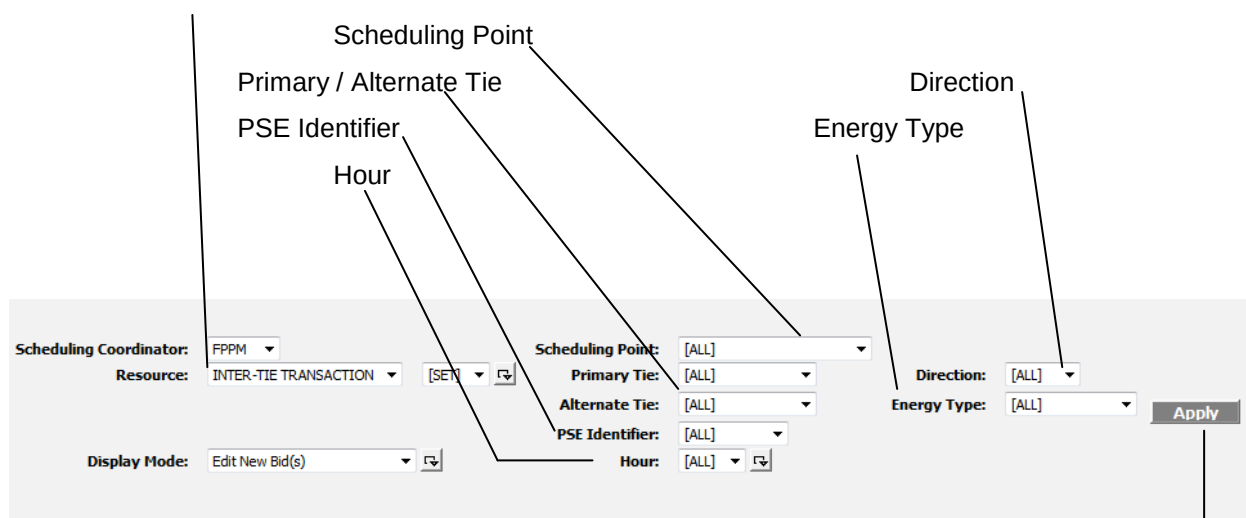
Submit selected bid(s) to new date(s)

3.4.1 Transaction Walkthrough

This section will take the user step-by-step through the bid entry process. The scenario used in this walkthrough is straightforward and designed to take the user through each of the basic bid-entry steps.

To create a Transaction bid, from the Hourly Components / Product Display in the Market Header where Scheduling Coordinator is selected there are drop downs to select:

Resource: INTER-TIE TRANSACTION



Labels pointing to fields in the form:

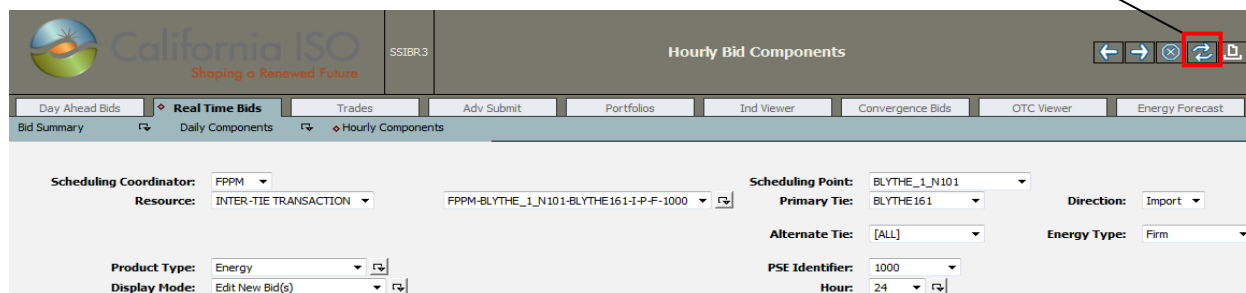
- Scheduling Coordinator
- Resource
- Display Mode
- Scheduling Point
- Primary / Alternate Tie
- PSE Identifier
- Hour
- Energy Type
- Direction
- Apply

The combination of the entered data will be processed by SIBR to generate a Transaction MRID (name) based on SIBR Business Rules.

All data must be entered except for Alternate Tie (this is only for certain Tie Points).

Once all data is entered click on the 'Apply' button.

Next click on the 'Refresh' icon, this will populate the Resource drop down with the MRID.



Fields populated after processing:

- Scheduling Coordinator: FPPM
- Resource: INTER-TIE TRANSACTION (with MRID: FPPM-BLYTHE_1_N101-BLYTHE161-I-P-F-1000)
- Scheduling Point: BLYTHE_1_N101
- Primary Tie: BLYTHE161
- Alternate Tie: [ALL]
- PSE Identifier: 1000
- Hour: 24
- Direction: Import
- Energy Type: Firm

The 'Refresh' icon (circular arrow) is highlighted with a red box.

Once all Hourly Components have been entered, click Bid Summary to review, edit, and submit the bid.

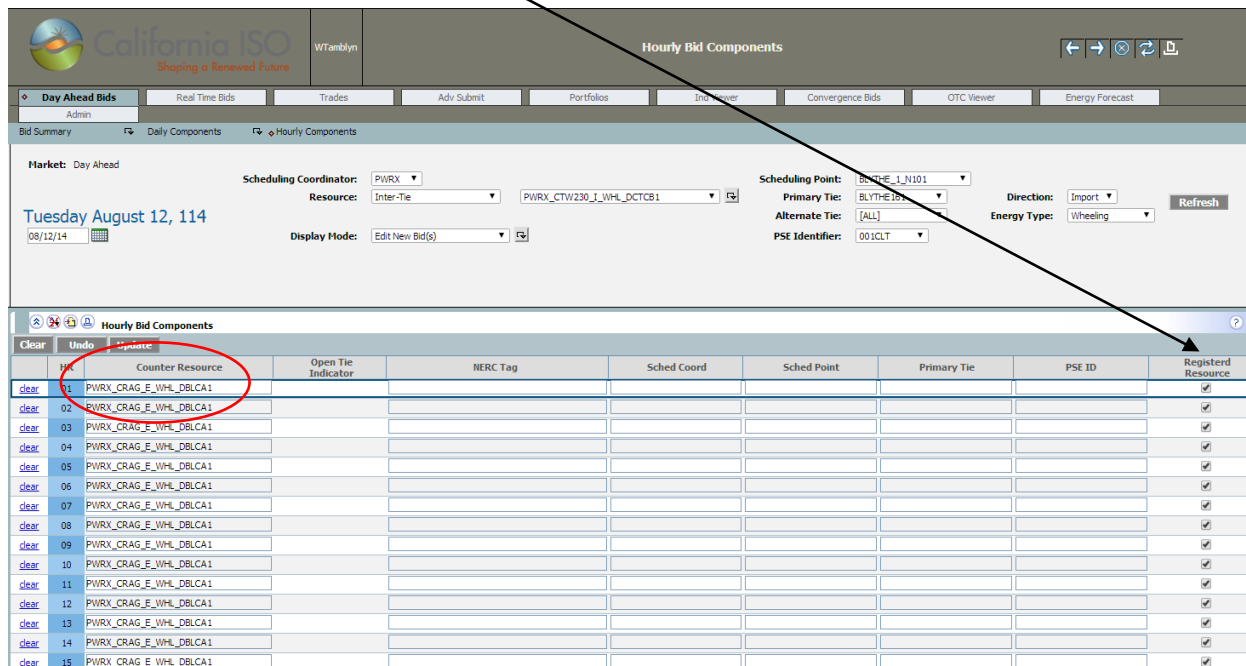
3.4.2 Wheeling Walkthrough

This section will take the user step-by-step through Wheeling transaction entry process. The Wheeling functionality now uses the 'Counter Resource' instead of a Wheeling Reference.

The 'Counter Resource' if submitting a bid on an Import, would be the Export resource.

There are both Registered Interties and Transactions that may have Wheeling.

If the bid is on a registered Intertie the Counter Resource must be the other Wheeling Transaction bid, and the Registered Resource check box must be selected.

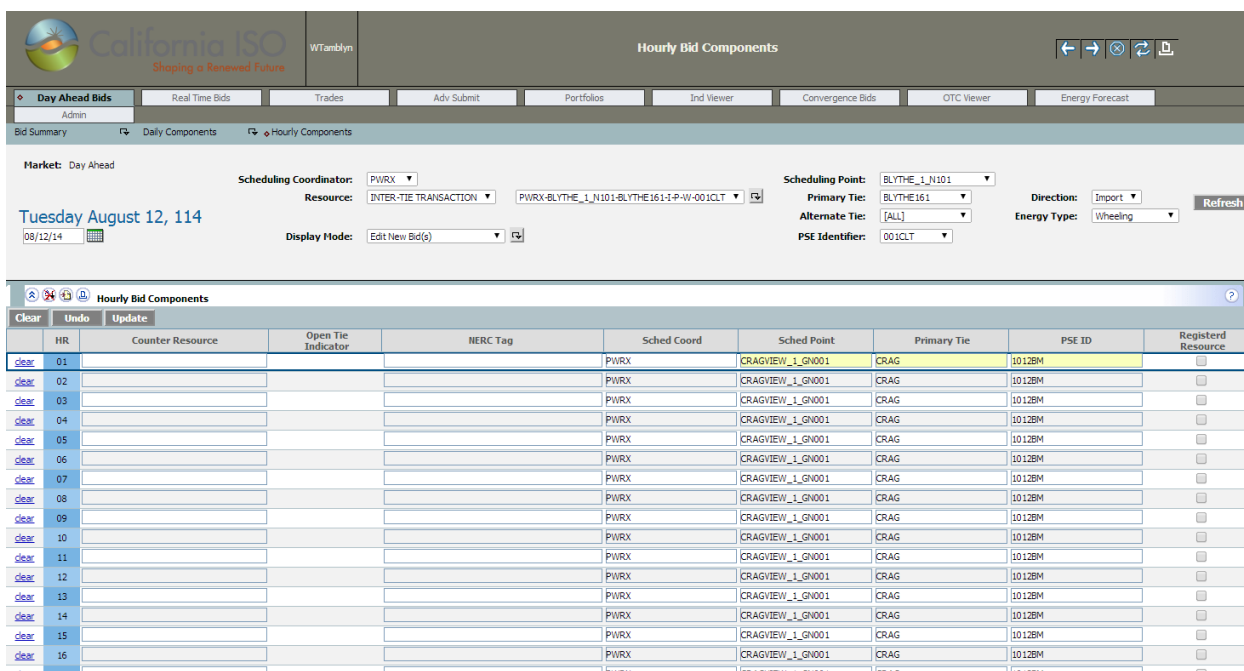


The screenshot shows the 'Hourly Bid Components' table with the following columns: Clear, Undo, Counter Resource, Open Tie Indicator, NERC Tag, Sched Coord, Sched Point, Primary Tie, PSE ID, and Registered Resource. The 'Counter Resource' column is circled in red. The table contains 15 rows of data, each with a 'clear' button and a 'Registered Resource' checkbox.

Clear	Undo	Counter Resource	Open Tie Indicator	NERC Tag	Sched Coord	Sched Point	Primary Tie	PSE ID	Registered Resource
clear		01 PWRX_CRAG_E_WHL_DBLCA1							☒
clear		02 PWRX_CRAG_E_WHL_DBLCA1							☒
clear		03 PWRX_CRAG_E_WHL_DBLCA1							☒
clear		04 PWRX_CRAG_E_WHL_DBLCA1							☒
clear		05 PWRX_CRAG_E_WHL_DBLCA1							☒
clear		06 PWRX_CRAG_E_WHL_DBLCA1							☒
clear		07 PWRX_CRAG_E_WHL_DBLCA1							☒
clear		08 PWRX_CRAG_E_WHL_DBLCA1							☒
clear		09 PWRX_CRAG_E_WHL_DBLCA1							☒
clear		10 PWRX_CRAG_E_WHL_DBLCA1							☒
clear		11 PWRX_CRAG_E_WHL_DBLCA1							☒
clear		12 PWRX_CRAG_E_WHL_DBLCA1							☒
clear		13 PWRX_CRAG_E_WHL_DBLCA1							☒
clear		14 PWRX_CRAG_E_WHL_DBLCA1							☒
clear		15 PWRX_CRAG_E_WHL_DBLCA1							☒

Import Bid uses Export Counter Resource, the Export Bid uses the Import Counter Resource.

If the bid is on a Transaction then the Scheduling Coordinator, Scheduling Point, Primary Tie, PSE Identifier must be supplied that when applied and submitted will generate the Counter Resource using the Transaction MRID for the other Wheeling Transaction

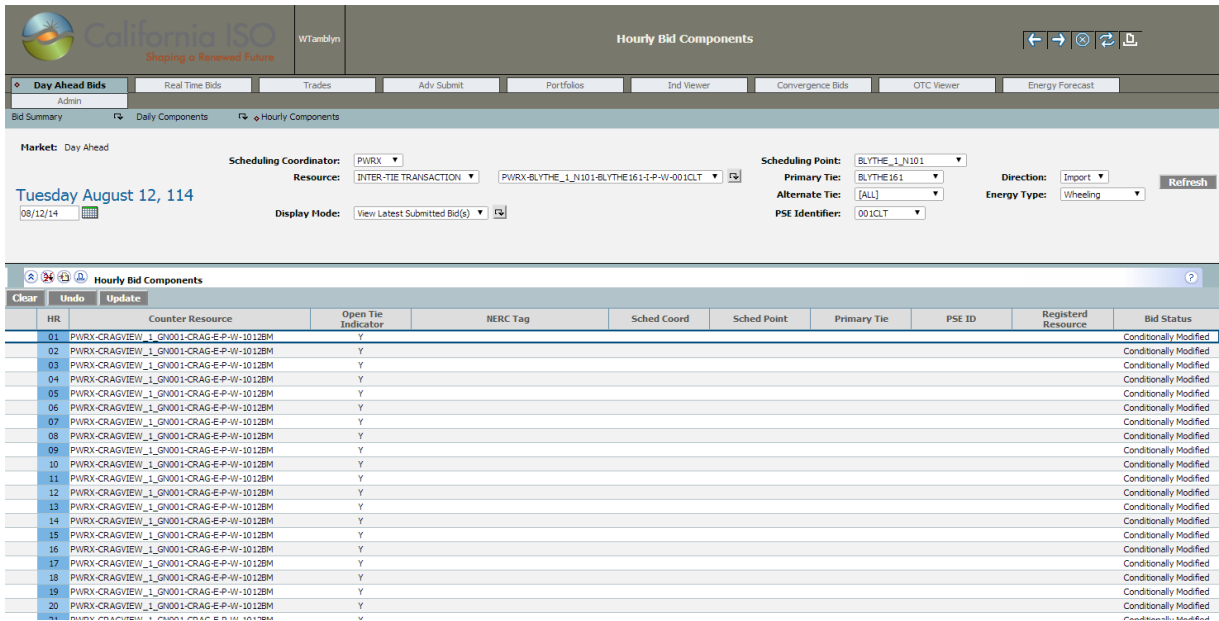


HR	Counter Resource	Open Tie Indicator	NERC Tag	Sched Coord	Sched Point	Primary Tie	PSE ID	Registered Resource
clear 01				PWRX	CRAGVIEW_1_GN001	CRAG	1012PM	
clear 02				PWRX	CRAGVIEW_1_GN001	CRAG	1012PM	
clear 03				PWRX	CRAGVIEW_1_GN001	CRAG	1012PM	
clear 04				PWRX	CRAGVIEW_1_GN001	CRAG	1012PM	
clear 05				PWRX	CRAGVIEW_1_GN001	CRAG	1012PM	
clear 06				PWRX	CRAGVIEW_1_GN001	CRAG	1012PM	
clear 07				PWRX	CRAGVIEW_1_GN001	CRAG	1012PM	
clear 08				PWRX	CRAGVIEW_1_GN001	CRAG	1012PM	
clear 09				PWRX	CRAGVIEW_1_GN001	CRAG	1012PM	
clear 10				PWRX	CRAGVIEW_1_GN001	CRAG	1012PM	
clear 11				PWRX	CRAGVIEW_1_GN001	CRAG	1012PM	
clear 12				PWRX	CRAGVIEW_1_GN001	CRAG	1012PM	
clear 13				PWRX	CRAGVIEW_1_GN001	CRAG	1012PM	
clear 14				PWRX	CRAGVIEW_1_GN001	CRAG	1012PM	
clear 15				PWRX	CRAGVIEW_1_GN001	CRAG	1012PM	
clear 16				PWRX	CRAGVIEW_1_GN001	CRAG	1012PM	

Blythe Import bid using CRAG as the Sched Point and Primary Tie for the Counter Resource.

After applying the changes, Update, then navigate to the Summary page to select and submit the bid.

Once the bid has been submitted and processed, the SIBR Rules will generate the Counter Resource for the Transaction. (same methodology as when a Transaction bid is submitted.)



The screenshot displays the "Hourly Bid Components" page in the California ISO SIBR system. The interface includes a top navigation bar with the California ISO logo and the text "Shaping a Renewed Future". Below this is a "Hourly Bid Components" header with a "Wfamblyn" label and a "Hourly Bid Components" title. The main content area is divided into several sections:

- Day Ahead Bids:** A section with a "Day Ahead" tab and a "Bid Summary" link.
- Market:** A section showing "Day Ahead" and "Tuesday August 12, 114".
- Scheduling Coordinator:** A section with a "PWRX" dropdown and a "Resource" dropdown set to "INTER-TIE TRANSACTION".
- Scheduling Point:** A section with a "BLYTHE_1_N101" dropdown and a "Primary Tie" dropdown set to "BLYTHE 161".
- Direction:** A section with a "Import" dropdown and a "Refresh" button.
- Energy Type:** A section with a "Wheeling" dropdown.
- PSE Identifier:** A section with a "001CLT" dropdown.
- Display Mode:** A section with a "View Latest Submitted Bid(s)" dropdown.

Below these sections is a table titled "Hourly Bid Components" with columns: HR, Counter Resource, Open Tie Indicator, NERC Tag, Sched Coord, Sched Point, Primary Tie, PSE ID, Registered Resource, and Bid Status. The table contains 20 rows of data, all showing "Conditionally Modified" bid status.

HR	Counter Resource	Open Tie Indicator	NERC Tag	Sched Coord	Sched Point	Primary Tie	PSE ID	Registered Resource	Bid Status
01	PWRX-CRAGVIEW_1_GN001-CRAG-E-P-W-1012EM	Y							Conditionally Modified
02	PWRX-CRAGVIEW_1_GN001-CRAG-E-P-W-1012EM	Y							Conditionally Modified
03	PWRX-CRAGVIEW_1_GN001-CRAG-E-P-W-1012EM	Y							Conditionally Modified
04	PWRX-CRAGVIEW_1_GN001-CRAG-E-P-W-1012EM	Y							Conditionally Modified
05	PWRX-CRAGVIEW_1_GN001-CRAG-E-P-W-1012EM	Y							Conditionally Modified
06	PWRX-CRAGVIEW_1_GN001-CRAG-E-P-W-1012EM	Y							Conditionally Modified
07	PWRX-CRAGVIEW_1_GN001-CRAG-E-P-W-1012EM	Y							Conditionally Modified
08	PWRX-CRAGVIEW_1_GN001-CRAG-E-P-W-1012EM	Y							Conditionally Modified
09	PWRX-CRAGVIEW_1_GN001-CRAG-E-P-W-1012EM	Y							Conditionally Modified
10	PWRX-CRAGVIEW_1_GN001-CRAG-E-P-W-1012EM	Y							Conditionally Modified
11	PWRX-CRAGVIEW_1_GN001-CRAG-E-P-W-1012EM	Y							Conditionally Modified
12	PWRX-CRAGVIEW_1_GN001-CRAG-E-P-W-1012EM	Y							Conditionally Modified
13	PWRX-CRAGVIEW_1_GN001-CRAG-E-P-W-1012EM	Y							Conditionally Modified
14	PWRX-CRAGVIEW_1_GN001-CRAG-E-P-W-1012EM	Y							Conditionally Modified
15	PWRX-CRAGVIEW_1_GN001-CRAG-E-P-W-1012EM	Y							Conditionally Modified
16	PWRX-CRAGVIEW_1_GN001-CRAG-E-P-W-1012EM	Y							Conditionally Modified
17	PWRX-CRAGVIEW_1_GN001-CRAG-E-P-W-1012EM	Y							Conditionally Modified
18	PWRX-CRAGVIEW_1_GN001-CRAG-E-P-W-1012EM	Y							Conditionally Modified
19	PWRX-CRAGVIEW_1_GN001-CRAG-E-P-W-1012EM	Y							Conditionally Modified
20	PWRX-CRAGVIEW_1_GN001-CRAG-E-P-W-1012EM	Y							Conditionally Modified

After submission, you can view the Hourly Display page and see the generated Counter Resource.

4 Trades

Overview

Overview of the trading system user interface.

4.1 Hourly Trade Detail Display

Overview

This display will allow the user to enter/create, view submitted, submit, copy/paste, and cancel trades for the RT, and the DA markets. When viewing submitted trades, you will always see the current in market trade and/or the latest submitted trade (depending on the display mode filter). The user will be allowed to view both the “created state” (which is editable), and the latest submitted trade (which is view-only) side by side. The user will also be able to filter by hour using the multi-select hour filter or view all bids for the entire day.

Navigating to this display

Once logged in to the SIBR system, the Hourly Trade Detail display can be found under the Trades tab and Hourly Detail.

Tabular Controls



To clear the contents of a trade

The [Clear] button erases or clears the contents of all enterable fields on the tabular display without committing the changes to the database

To cancel a trade

The [Cancel] button undoes any changes and refreshes the display

To update trade data

The [Update] button commits any changes made on the display to the database

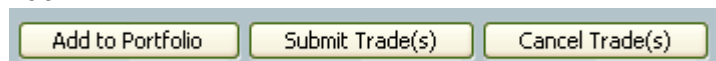
To delete a trade

The [Delete] button deletes any trade that's in the created state

To create a new trade

The [New] button creates a new trade based on selected filter criteria

Application Functions



To add trades to a portfolio

The [Add to Portfolio] button adds the currently selected trade(s) to a given portfolio

To submit trades

The [Submit Trades] button submits selected trades to the market for processing. Trades are selected via the checkbox in the multi-function column in the tabular data grid.

To Cancel trades

The [Cancel Trades] button cancels trades selected via the checkbox in the multi-function column.

Toolbar Functions



Another way to cancel trades

The “Cancel Market day(s) trade(s)” function will have the same functionality as it does in Bids.

To edit trades

The “Edit selected trade(s)” function will have the same functionality as it does in Bids.

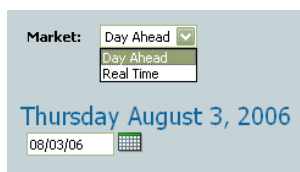
Copy selected trade(s) to new trading day

The “Copy selected trade(s) to new trading day” function copies selected rows to a new date for future use. User can select a date range (and for Physical trades, a single trade name) for all selected rows

Submit selected trade(s) to future date(s)

The “Submit selected trade(s) to future date(s)” function copies selected rows to a selected date (in the future) and also submits the selected trades.

Filters

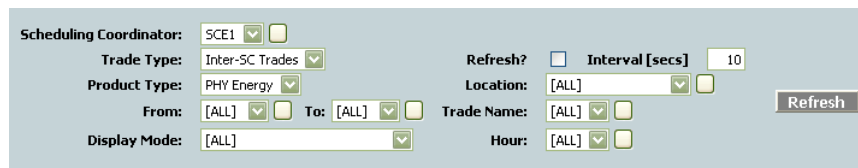


Market

Day Ahead, Real Time

Date

Month/Day/Year text box with pop-up



The screenshot shows a web interface for the Scheduling Coordinator. It includes several filter fields: 'Scheduling Coordinator' (set to SCE1), 'Trade Type' (Inter-SC Trades), 'Product Type' (PHY Energy), 'From' (ALL), 'To' (ALL), 'Display Mode' (ALL), 'Refresh?' (checkbox), 'Interval [secs]' (10), 'Location' (ALL), 'Trade Name' (ALL), and 'Hour' (ALL). A 'Refresh' button is located on the right side of the filter area.

**Scheduling
Coordinator**

The selected Scheduling Coordinator. Users will see their name in this drop-down list. Super SCs will see a list of all SCs in the system and be able to select and view any SCs data

Trade Type

Inter-SC Trades, Ancillary Services Trades, Unit Commitment Trades

Product Type

Market and Trade Type dependant (PHY Energy, APN Energy, CPT Energy)

From

List of SCs associated with the logged in user

To

List of SCs to sell to

Display Mode

View All, View Edited Trade(s), View Latest Submitted Trade(s)

Refresh

The user will check/uncheck this box if they wish to enable/disable the page refresh feature. The user will be able to set the refresh rate by entering a value in the Text Box.

Location

List of resource locations, trading hubs, or aggregation points. Depends on trade type.

Trade Name

Hour

1-23... 25

Columns

**Multi-Function
Column**

Left-most column without a heading. This column will be used for “row level” buttons and indicators

 California ISO Shaping a Renewed Future	SIBR – Scheduling Coordinator Users Guide	Version: 5.0 Date: 11/4/2014
--	--	---

- Check Box - On/off indicator that allows a user to use select/de-select the trade row
- Clear - Clear the contents of the row
- “!” Icon - Click to view messages. Note: This will only be displayed for “submitted” trades

Hour	Driven by Hour filter
Product Type	Driven by Product filter. Dependent on Market and Trade Type. (For Inter-SC Trades: PIT Energy, FIT Energy, CFT Energy) This column is only visible when multiple products are selected.
Selling SC	Driven by “From SC” Filter
Buying SC	Driven by “To SC” filter
Trading Location	Driven by the “Trading Location” filter. Note: This column will display either physical trading location, trading hub, or aggregation point depending on which trade type is selected.
Submitted Qty.	Quantity traded in MW
Adjusted Qty.	Displays new quantity for trade if it is adjusted pro-rata
Counter Qty.	Counter party’s reported MW traded quantity. (Stored procedure needs to return this value from the counter party’s buy or sell trade.
Trade Name	IST trade name. (Physical trades only. This will be entered via a text box in the toolbar area prior to the user pressing the New Trade button. This field will be programmatically validated to guard against duplicates. Financial trades will not display this column.
Trade Type	Driven by the Trade Type filter (Inter-SC Trades, Ancillary Services Trades, Unit Commitment Trades)

 California ISO Shaping a Renewed Future	SIBR – Scheduling Coordinator Users Guide	Version: 5.0 Date: 11/4/2014
--	--	---

Depend on Trade

IST (trade name) that this trade depends on

Submitting SC

Driven by the SC user filter. This column will only be visible to “Super SCs”. This column is only displayed when multiple sc's are selected.

Trade Status

“Created” for new/editable trades, otherwise the current status of the submitted trade. Trade status is one of the following:

- Cancelled
- Invalid
- Valid
- Conditionally Modified
- Conditionally Valid
- Conditionally Invalid
- Created
- Submitted
- Modified'
- Rejected
- Obsolete
- Unmatched
- Missing Consent
- Review
- Matched

Submitted

Market Status

4.2 Trade Summary Display

Overview	This display will show a “Rolled-Up”, or a summarized view of RTM and DAM trades for all products. Physical and Financial trades will be summarized using buying/selling SC, date, market, type and IST/dependant name for physical trades only.
Navigating to	Once logged in to the SIBR system, the Hourly Trade Detail display can be found under the Trades tab and Trades Summary.
Filters	
Market	Day Ahead, Real Time
Date	Month/Day/Year text box with pop-up
Scheduling Coordinator	Users will see their name in this drop-down list. Super SCs will see a list of all SCs in the system and be able to select and view any SCs data
Trade Type	Inter-SC Trades, Ancillary Services Trades, Unit Commitment Trades
Product Type	Market and Trade Type dependant (PHY Energy, APN Energy, CPT Energy)
From	List of SCs associated with the logged in user
To	List of SCs to sell to
Display Mode	View All, View Edited Trade(s), View Latest Submitted Trade(s)
Refresh	The user will check/uncheck this box if they wish to enable/disable the page refresh feature. The user will be able to set the refresh rate by entering a value in the Text Box.

Location List of resource locations, trading hubs, or aggregation points. Depends on trade type.

Trade Name

Columns

Multi-Function Column

Left-most column without a heading. This column will be used for “row level” buttons and indicators

- Check Box - Description: On/off indicator that allows a user to use select/de-select the trade row
- Clear - Description: Clear the contents of the row
- “!” Icon - Click to view messages. Note: This will only be displayed for “submitted” trades
-

Product Type

Driven by Product filter. Dependent on Market and Trade Type. (For Inter-SC Trades: PIT Energy, FIT Energy, CFT Energy) This column is only visible when multiple products are selected.

Selling SC

Driven by “From SC” Filter

Buying SC

Driven by “To SC” filter

Trading Location

Driven by the “Trading Location” filter. Note: This column will display either physical trading location, trading hub, or aggregation point depending on which trade type is selected.

Total Submitted Qty.

Total Counter Qty. - Description: Counter party’s reported MW traded quantity. (Stored procedure needs to return this value from the counter party’s buy or sell trade.

Trade Name

IST trade name. (Physical trades only. This will be entered via a text box in the toolbar area prior to the user pressing the New Trade button. This field will be programmatically validated to guard against duplicates. Financial trades will not display this column.



Depend on Trade	IST (trade name) that this trade depends on
Trade Type	Driven by the Trade Type filter (Inter-SC Trades, Ancillary Services Trades, Unit Commitment Trades)
Submitting SC	Driven by the SC user filter. This column will only be visible to “Super SCs”. This column is only displayed when multiple sc's are selected.
Trade(s) Status	“Created” for new/editable trades, otherwise the current status of the submitted trade.
Hidden Columns	
Hours	Comma delimited list of the hours that are rolled-up

4.3 Trade Entry Walkthrough

This section will take the user step-by-step through the trade entry process. The scenario used in this walkthrough is straightforward and designed to take the user through each of the basic bid-entry steps. Some aspects of the bid-entry process may be left out due to the fact that bids can become very complex.

Assuming user is brought to Day-Ahead Bid Summary at login. Click on Trades and then the Hourly Detail tab to bring up the Trade Hourly Detail display.

Step 1: Define trade criteria

Define the trade criteria via the filters on the Hourly Trade Detail display.

1. Select the Market for the trade
2. Select the Date when the trade will apply
3. Select the Product which will be traded
4. Select the From and To parties involved in the trade
5. Select a Location where the trade will take place
6. Select the Hours for which the trade will apply

For further help defining trade criteria, refer to section 4.1 for a description of all of the filters.

1. Click [Apply] when all trade criteria has been entered.

2. Market: Day Ahead

3. Monday May 13, 2013
05/13/13

4. Trade Type: Inter-SC Trades
Product Type: PHY Energy

5. From: [ALL] To: [ALL]

6. Refresh? ☐ Interval [secs] 10
Location: [ALL] Trade Name: [ALL]

Display Mode: View Latest Submitted Trade(s)

Product Type	Selling SC	Buying SC	Trading Location	Total Submitted Qty.	Total Counter Qty.	Trade Name	Depend on Trade

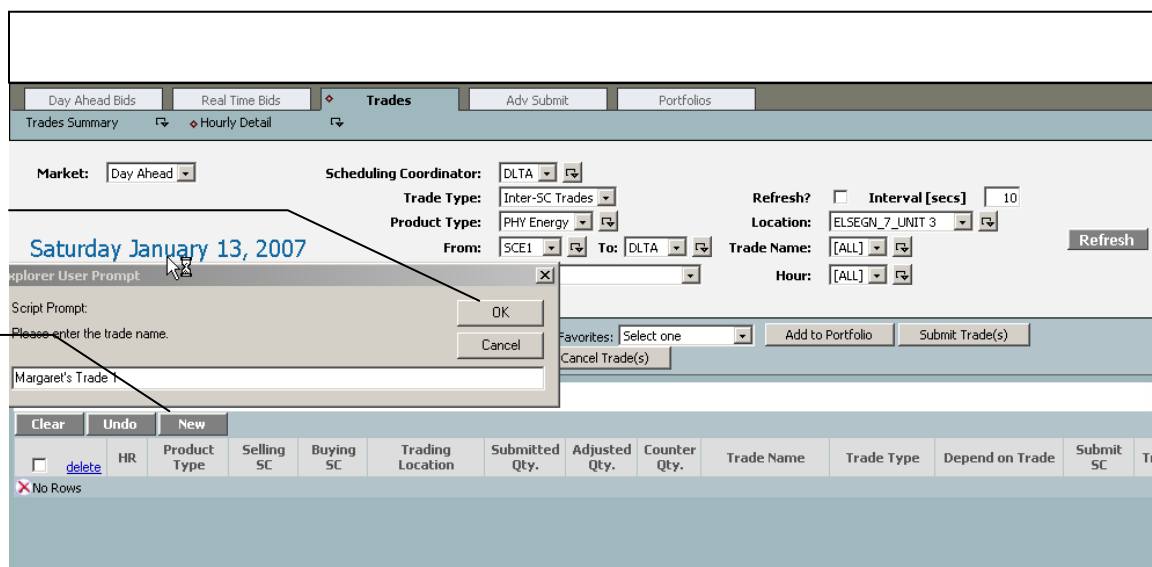
Step 2: Create a new trade

Generate and name the new trade

1. Click the [New] button in the tabular controls
2. For physical trades, enter the name of the trade. Click [Ok]

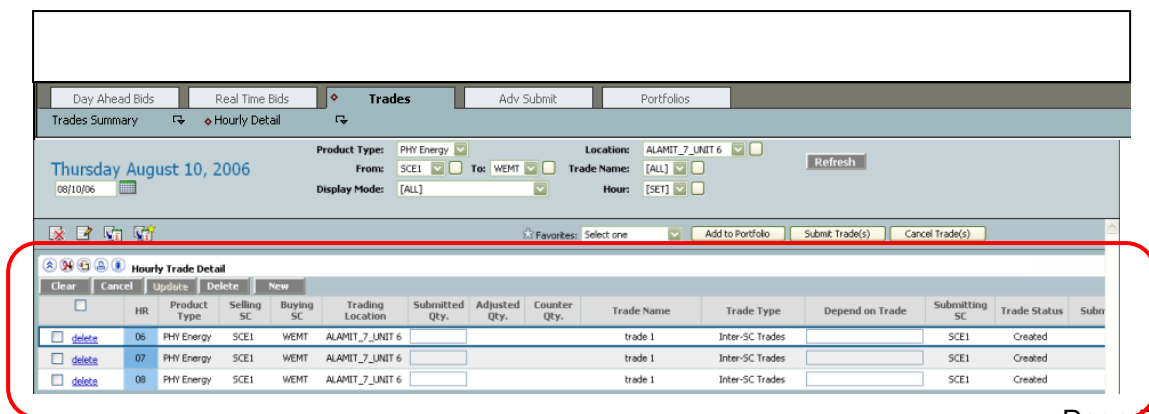
2.

1.



The screenshot shows the SIBR interface with the 'Trades' tab selected. A 'Script Prompt' dialog box is open, asking for a trade name. The dialog box has an 'OK' button and a 'Cancel' button. The background shows the 'Trades' tab with various filters and a table of trades.

The newly created trade will appear in the Hourly Trade Detail table.



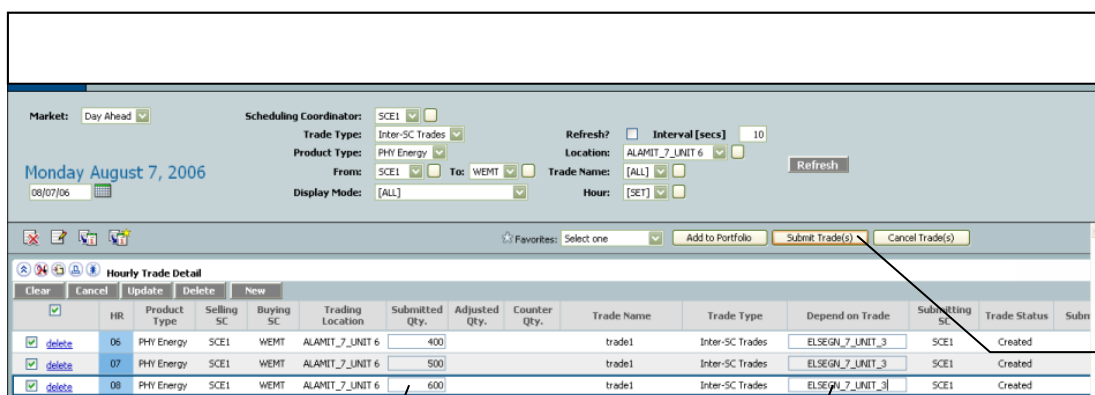
The screenshot shows the SIBR interface with the 'Hourly Trade Detail' table. The table has columns for HR, Product Type, Selling SC, Buying SC, Trading Location, Submitted Qty., Adjusted Qty., Counter Qty., Trade Name, Trade Type, Depend on Trade, Submitting SC, and Trade Status. The table shows three rows of trades for Thursday August 10, 2006.

HR	Product Type	Selling SC	Buying SC	Trading Location	Submitted Qty.	Adjusted Qty.	Counter Qty.	Trade Name	Trade Type	Depend on Trade	Submitting SC	Trade Status
06	PHY Energy	SCE1	WEMT	ALAMIT_7_UNIT 6				trade 1	Inter-SC Trades		SCE1	Created
07	PHY Energy	SCE1	WEMT	ALAMIT_7_UNIT 6				trade 1	Inter-SC Trades		SCE1	Created
08	PHY Energy	SCE1	WEMT	ALAMIT_7_UNIT 6				trade 1	Inter-SC Trades		SCE1	Created

Step 3: Enter trade quantities and submit

Enter the trade quantities (and for physical trades, the depend on trade name) and submit the trades to the market.

1. Enter trade quantity in the “Submitted Quantity” field
2. Enter a depend on trade name in the “Depend on Trade”
Select some or all of the created trades you wish to submit via the checkboxes in the leftmost column
3. Click the Submit Trade(s) button to submit the trade



1.

2.

3.

The trade has now been submitted to the market and will be subjected to the market rules. The submitted trade may now be viewed from the Trades Summary page. There, the user can monitor the trade status and view other trades fitting the summary display criteria.

Rejected Trades...

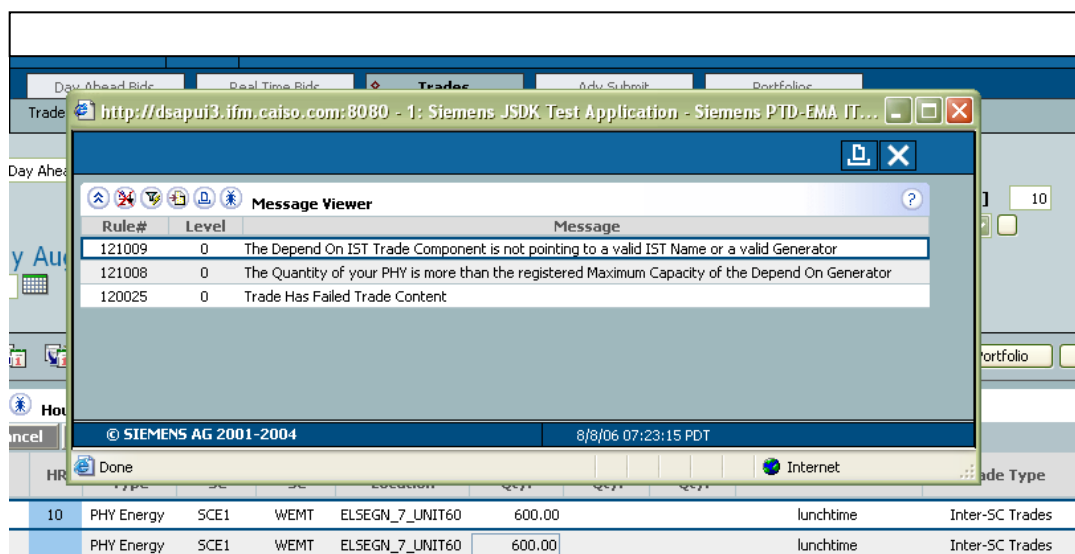
Rejected trade in Trade Summary display.

Trade Summary										
☐	Product Type	Selling SC	Buying SC	Trading Location	Total Submitted Qty.	Total Counter Qty.	Trade Name	Depend on Trade	Trade Type	Submitting SC
☐	PHY Energy	SCE1	WEMT	ELSEGN_7_UNIT60	0.00		lunchtime	ELSEGN_7_UNIT_3	Inter-SC Trades	SCE1
										Rejected

Go to Hourly Trade Detail display. Click icon to view messages

Hourly Trade Detail													
☐	HR	Product Type	Selling SC	Buying SC	Trading Location	Submitted Qty.	Adjusted Qty.	Counter Qty.	Trade Name	Trade Type	Depend on Trade	Submitting SC	Trade Status
☐	10	PHY Energy	SCE1	WEMT	ELSEGN_7_UNIT60	600.00			lunchtime	Inter-SC Trades	ELSEGN_7_UNIT_3	SCE1	Rejected
☐		PHY Energy	SCE1	WEMT	ELSEGN_7_UNIT60	600.00			lunchtime	Inter-SC Trades	ELSEGN_7_UNIT_3	SCE1	Created
☐	11	PHY Energy	SCE1	WEMT	ELSEGN_7_UNIT60	500.00			lunchtime	Inter-SC Trades	ELSEGN_7_UNIT_3	SCE1	Rejected
☐		PHY Energy	SCE1	WEMT	ELSEGN_7_UNIT60	500.00			lunchtime	Inter-SC Trades	ELSEGN_7_UNIT_3	SCE1	Created
☐	12	PHY Energy	SCE1	WEMT	ELSEGN_7_UNIT60	500.00			lunchtime	Inter-SC Trades	ELSEGN_7_UNIT_3	SCE1	Rejected
☐		PHY Energy	SCE1	WEMT	ELSEGN_7_UNIT60	500.00			lunchtime	Inter-SC Trades	ELSEGN_7_UNIT_3	SCE1	Created
☐	13	PHY Energy	SCE1	WEMT	ELSEGN_7_UNIT60	500.00			lunchtime	Inter-SC Trades	ELSEGN_7_UNIT_3	SCE1	Rejected
☐		PHY Energy	SCE1	WEMT	ELSEGN_7_UNIT60	500.00			lunchtime	Inter-SC Trades	ELSEGN_7_UNIT_3	SCE1	Created
☐	14	PHY Energy	SCE1	WEMT	ELSEGN_7_UNIT60	600.00			lunchtime	Inter-SC Trades	ELSEGN_7_UNIT_3	SCE1	Rejected
☐		PHY Energy	SCE1	WEMT	ELSEGN_7_UNIT60	600.00			lunchtime	Inter-SC Trades	ELSEGN_7_UNIT_3	SCE1	Created

Read messages in the message viewer.



The screenshot shows a web application interface with a 'Message Viewer' window open. The window displays three error messages:

Rule#	Level	Message
121009	0	The Depend On IST Trade Component is not pointing to a valid IST Name or a valid Generator
121008	0	The Quantity of your PHY is more than the registered Maximum Capacity of the Depend On Generator
120025	0	Trade Has Failed Trade Content

The background shows a table with trade details, including columns for HR, Product Type, Selling SC, Buying SC, Trading Location, Submitted Qty., Adjusted Qty., Counter Qty., Trade Name, Trade Type, Depend on Trade, Submitting SC, and Trade Status.

5 Advanced Submit

SIBR offers Bid and Trade Upload functionality to import collections of bids or trades from xml files.

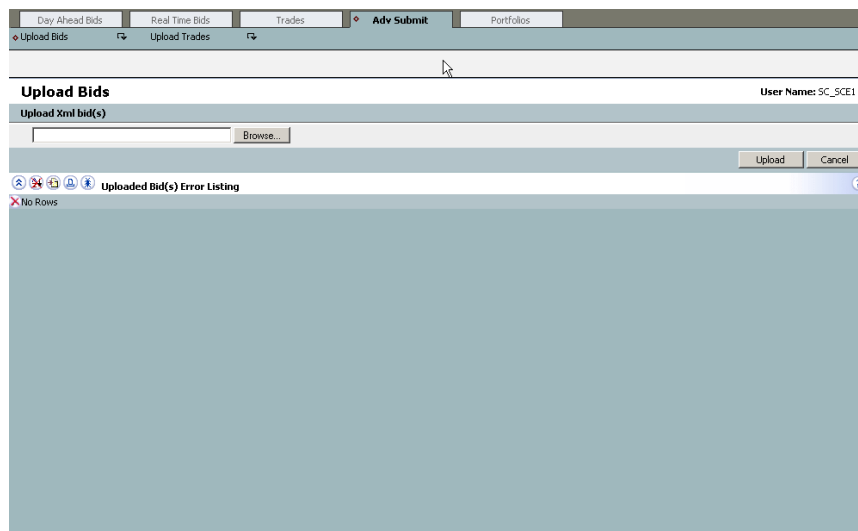
Uploading Bids

Customer gets the xml files from somewhere...

Must be logged in to the SIBR system...

1. Navigate to the Advanced Submit page by clicking on the Advanced Submit tab on the SIBR menu.
2. Select Upload Bids from the sub-menu.

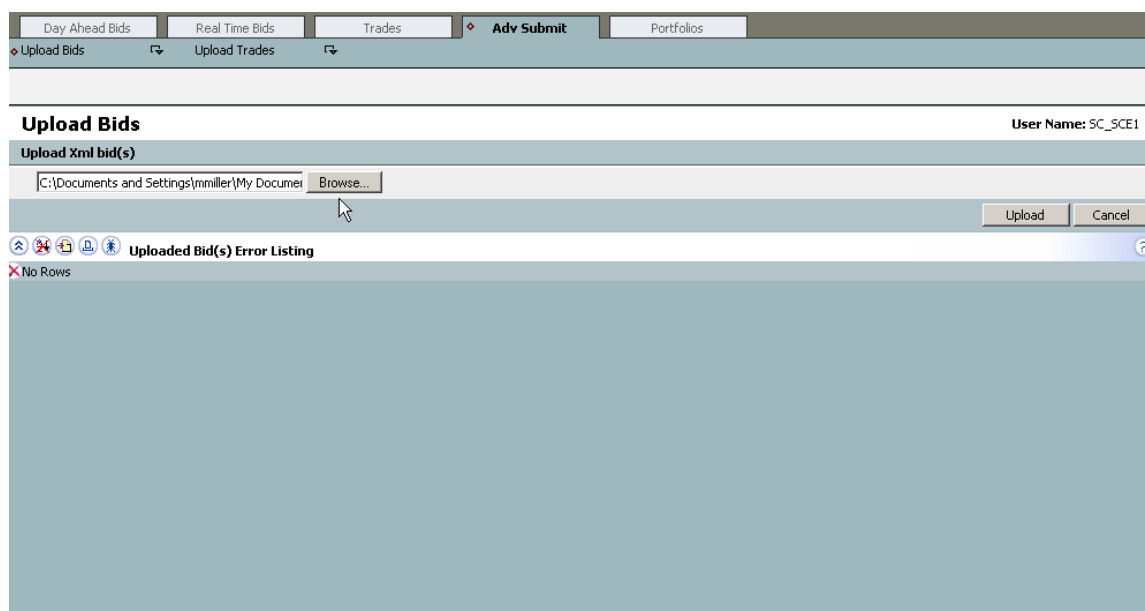
Figure 30: SIBR Bid Upload Screen



The screenshot shows the SIBR web application interface. At the top, there is a navigation bar with tabs: "Day Ahead Bids", "Real Time Bids", "Trades", "Adv Submit" (which is active), and "Portfolios". Below the navigation bar, there are sub-tabs: "Upload Bids", "Upload Trades", and "Trades". The "Upload Bids" sub-tab is selected. The main content area is titled "Upload Bids" and includes a "User Name: SC_SCE1" label. Below this, there is a section for "Upload Xml bid(s)" with a text input field and a "Browse..." button. To the right of the input field are "Upload" and "Cancel" buttons. Below the upload section, there is a section titled "Uploaded Bid(s) Error Listing" with a "No Rows" message and a large empty table area.

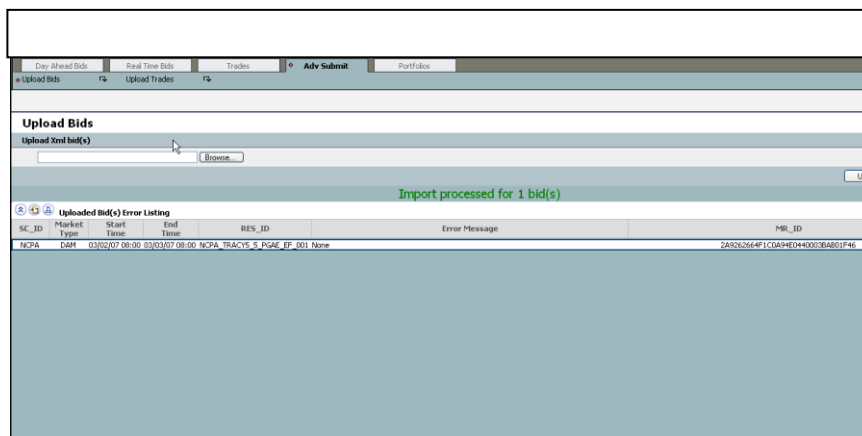
3. Click the browse button to bring up the file selection screen.
(
4. **Figure 31)**
5. Locate and select the desired .xml file. (
6. **Figure 31)**
7. Click Open. You will see the selected file in the Upload field.
8. Click on the Upload button to import the trades into SIBR.
9. When the file has been uploaded, a list of imported bids will be displayed along with any corresponding errors that occurred during the import process. (**Figure 33)**

Figure 31: SIBR Bid Upload - Browse for File



The screenshot displays the SIBR Bid Upload interface. At the top, there is a navigation bar with tabs: 'Day Ahead Bids', 'Real Time Bids', 'Trades', 'Adv Submit', and 'Portfolios'. Below this, there are buttons for 'Upload Bids', 'Upload Trades', and 'Upload'. The main section is titled 'Upload Bids' and includes a 'User Name: SC_SCE1' label. Underneath, there is a section for 'Upload Xml bid(s)' with a text field showing the file path 'C:\Documents and Settings\mmiller\My Document' and a 'Browse...' button. To the right of the text field are 'Upload' and 'Cancel' buttons. Below the 'Upload Bids' section is an 'Uploaded Bid(s) Error Listing' section, which currently shows 'No Rows'.

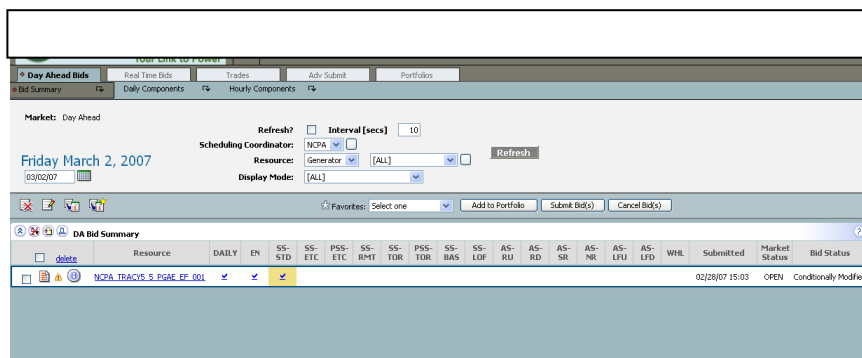
Figure 33: SIBR Bid Upload - Successful Import



SC_ID	Market Type	Start Time	End Time	BES_ID	Error Message	MB_ID
NCPA	DAH	03/02/07 08:00	03/03/07 08:00	NCPA_TRACYS_S_PGAF_FF_001	None	2A92C2664F1C0A4ED040000B4801F46

The imported Bids are now in the SIBR Bid system. Open the display pertaining to the imported Bids with the corresponding date range to confirm the Bid import and/or make changes to imported bids.

Figure 32: SIBR Bid Upload - Review Imported Bids



Resource	DAILY	EN	SS-STD	SS-ETC	PSS-ETC	SS-RMT	SS-TGR	PSS-TGR	SS-BAS	SS-LDF	AS-RU	AS-RD	AS-SR	AS-NR	AS-LPU	AS-LFD	WHL	Submitted	Market Status	Bid Status
NCPA_TRACYS_S_PGAF_FF_001																		02/28/07 15:03	OPEN	Conditionally Modified

Uploading Trades

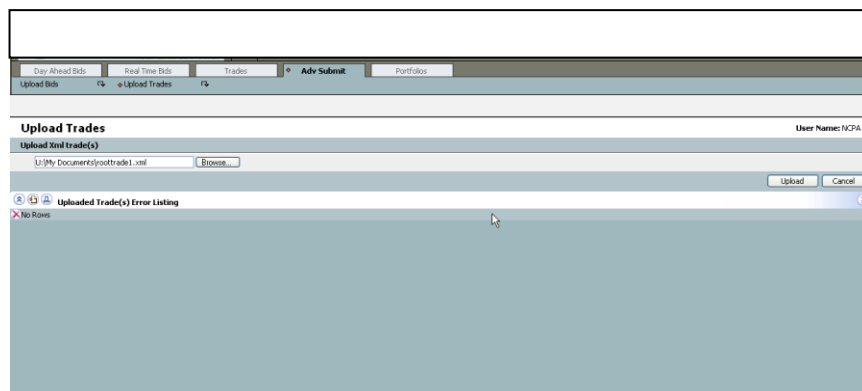
SIBR offers Bid Upload functionality to import collections of trades from xml files.

The Bid upload process is described below.

2.3.1 How to Upload Trades

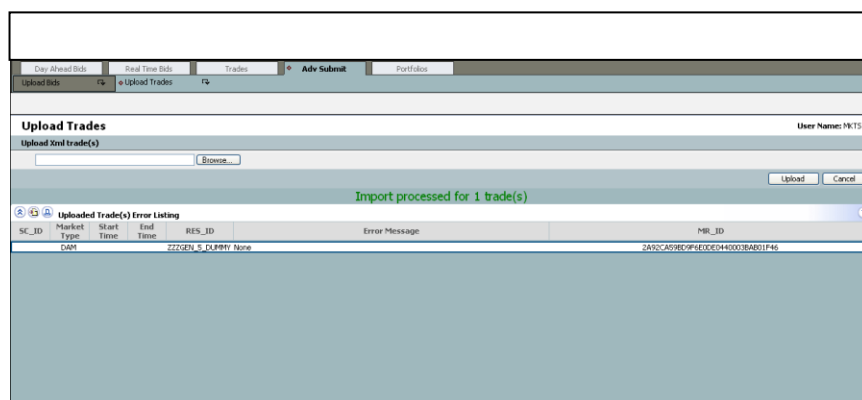
1. Log in to the SIBR system
 2. Navigate to the Advanced Submit page by clicking on the Advanced Submit tab on the SIBR menu.
 3. Select Upload Trades from the sub-menu.
 4. Click the browse button to bring up the file selection screen.
 5. Locate and select the desired .xml file.
 6. Click Open. You will see the selected file in the Upload field.
 7. Click on the Upload button to import the trades into SIBR.
- (Figure 1)

Figure 1: SIBR Trade Upload Screen



When the file has been uploaded, a list of imported bids will be displayed along with any corresponding errors that occurred during the import process. (Figure 2)

Figure 2: SIBR Trade Upload - Successful Import

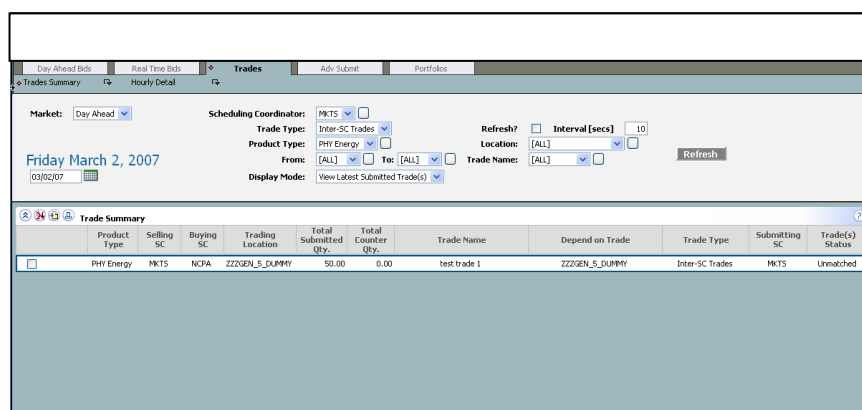


The screenshot shows the 'Upload Trades' section of the SIBR interface. At the top, there are tabs for 'Day Ahead Bids', 'Real Time Bids', 'Trades', 'Adv Submit', and 'Portfolio'. Below these are buttons for 'Upload Bids' and 'Upload Trades'. The 'Upload Trades' section has a text input for 'Upload Xml trade(s)' and a 'Browse...' button. A green message states 'Import processed for 1 trade(s)'. Below this is a table titled 'Uploaded Trade(s) Error Listing' with columns: SC_ID, Market Type, Start Time, End Time, RES_ID, Error Message, and MBL_ID. The table contains one row with the following data:

SC_ID	Market Type	Start Time	End Time	RES_ID	Error Message	MBL_ID
0000	DAY			ZZZGEN_S_DUMMY	None	2A92CA59B0F640DCE044000B4B01F46

The imported Trades are now in the SIBR Trade system. Open the Trade Summary display pertaining to the imported Trades with the corresponding date range to confirm the Trade import and/or make changes to imported Trades. (Figure 3)

Figure 3 Review Imported Trades in the Trade Summary Screen



The screenshot shows the 'Trade Summary' screen. At the top, there are tabs for 'Day Ahead Bids', 'Real Time Bids', 'Trades', 'Adv Submit', and 'Portfolio'. Below these are buttons for 'Trades Summary' and 'Hourly Detail'. The 'Trades Summary' section has a 'Market' dropdown set to 'Day Ahead' and a 'Scheduling Coordinator' dropdown set to 'MKTs'. There are also fields for 'Trade Type' (Inter-SC Trades), 'Product Type' (PHY Energy), 'From' (ALL), 'To' (ALL), 'Trade Name' (ALL), and a 'Refresh' button. Below this is a table titled 'Trade Summary' with columns: Product Type, Selling SC, Buying SC, Trading Location, Total Submitted Qty, Total Counter Qty, Trade Name, Depend on Trade, Trade Type, Submitting SC, and Trade(s) Status. The table contains one row with the following data:

Product Type	Selling SC	Buying SC	Trading Location	Total Submitted Qty	Total Counter Qty	Trade Name	Depend on Trade	Trade Type	Submitting SC	Trade(s) Status
PHY Energy	MKTs	NCPA	ZZZGEN_S_DUMMY	50.00	0.00	test trade 1	ZZZGEN_S_DUMMY	Inter-SC Trades	MKTs	Unmatched

6 Portfolios

Portfolios offer users the ability to save collections of bids and trades in one or more sheets in a named portfolio for future use. For example there could be a sheet named Unit XYZ DAM generation bids, LAP 123 DAM load bids and DAM Import Bids saved in a portfolio named “weekend” portfolio. These individual portfolio sheets can be retrieved and submitted individually or all three sheets can be submitted at once as an entire portfolio. Portfolios can be created for both the Day-Ahead and the Real-Time market. The following screen shots walk through the process of creating portfolios and submitting portfolios for bids. The process for trades is the same and can be followed by selecting the manage trades option instead of manage bids from the portfolio tab

6.1 Creating Portfolio Displays

Creating a Portfolio

Must be logged in to the SIBR system

1. Navigate to the Portfolio page by clicking on the Portfolio tab
2. In the SIBR menu. (Figure 37)
3. Select Manage Bids or Manage Trades from the sub-menu. (**Figure 38**)
4. Select add portfolio and enter name into pop-up box (Figure 39)
5. Select O.K and new named portfolio will appear (Figure 40)

Figure 37 Select Manage Bids or Manage Trades on Portfolio sub-menu

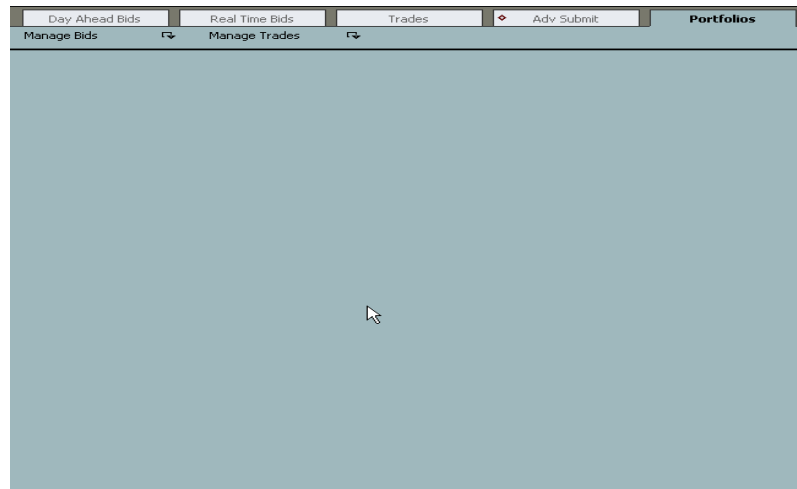


Figure 38 - Select Manage Bids from the sub-menu

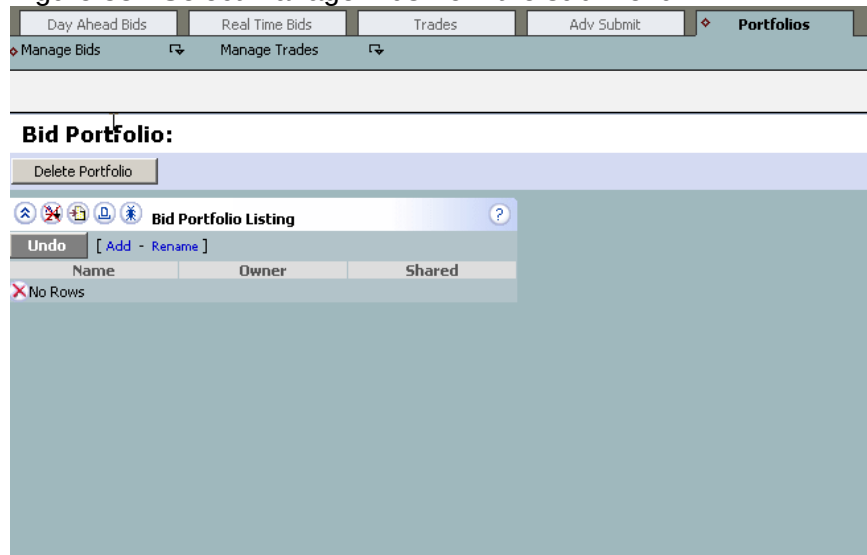


Figure 39 Select add Portfolio

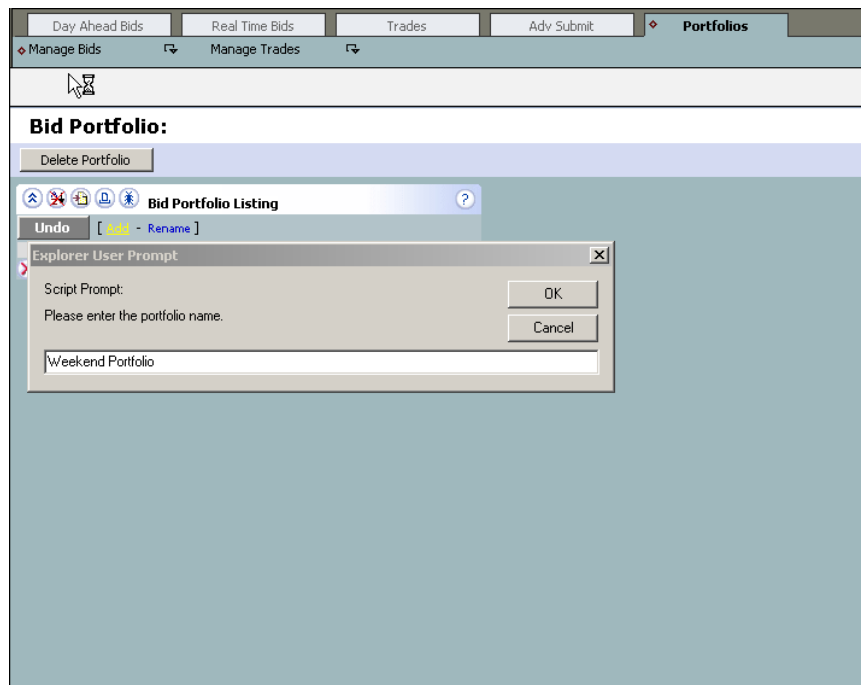
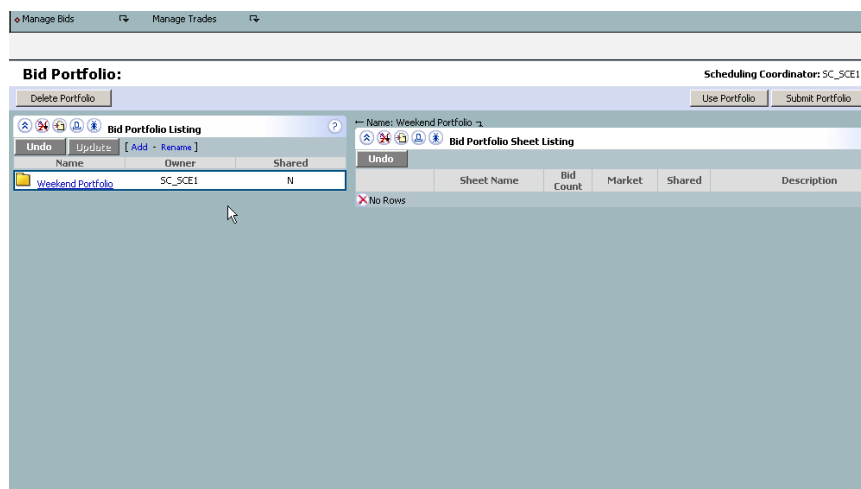


Figure 40 - Click O.K and view named portfolio

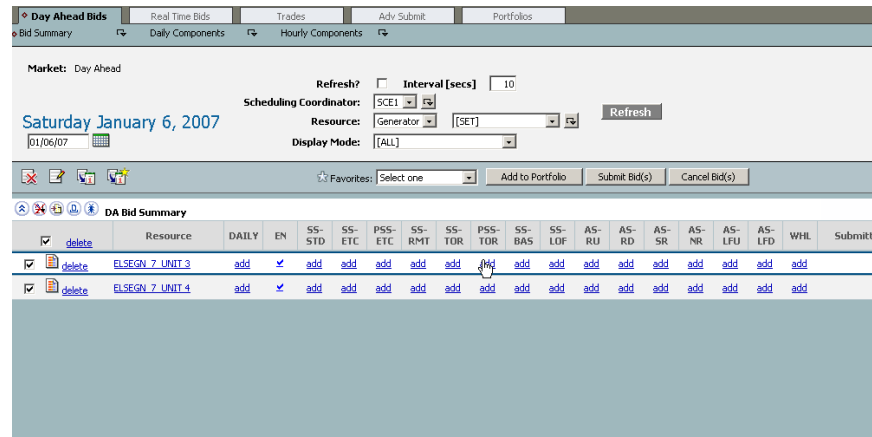


6.2 Save Bids to Created Portfolio Displays

**Save bids to
created portfolio**

6. Select Bids from SIBR Summary Screen either Day-Ahead or Real-Time to add to portfolio by selecting check box. Both bids that have been submitted and bids in created state can be added to portfolio (Figure 41)
7. Select Add to Portfolio Button and select portfolio you would like to add bids to from drop down list. (Figure 42)
8. Enter name for portfolio sheet and click OK (Figure 42)
9. Bids will now show up in Sheet Listing for Portfolio (Figure 43)

Figure 41 – Select Bids to add to already named portfolio



Market: Day Ahead

Refresh? ☐ Interval [secs] 10

Scheduling Coordinator: SCEI

Resource: Generator

Display Mode: [ALL]

Refresh

DA Bid Summary

delete	Resource	DAILY	EN	SS-STD	SS-ETC	PSS-ETC	SS-RMT	SS-TOR	PSS-TOR	SS-BAS	SS-LOF	AS-RU	AS-RD	AS-SR	AS-NR	AS-LFU	AS-LFD	WHL	Submit
delete	ELSEGN 7 UNIT 3	add	✓	add	add	add	add	add	add	add	add	add	add	add	add	add	add	add	
delete	ELSEGN 7 UNIT 4	add	✓	add	add	add	add	add	add	add	add	add	add	add	add	add	add	add	

Figure 42 - Select Portfolio and name Portfolio Sheet

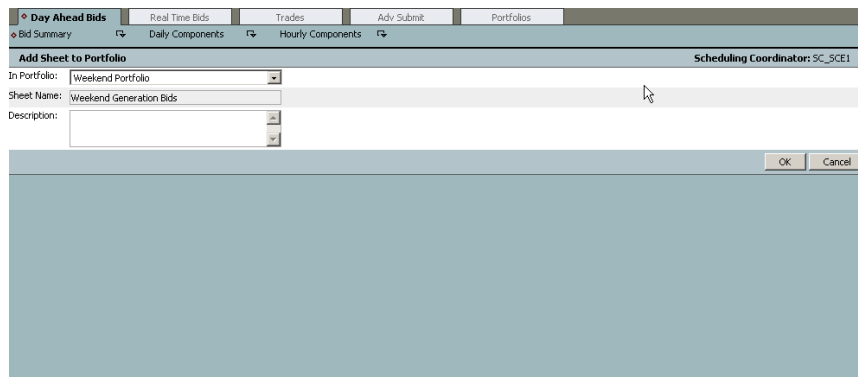
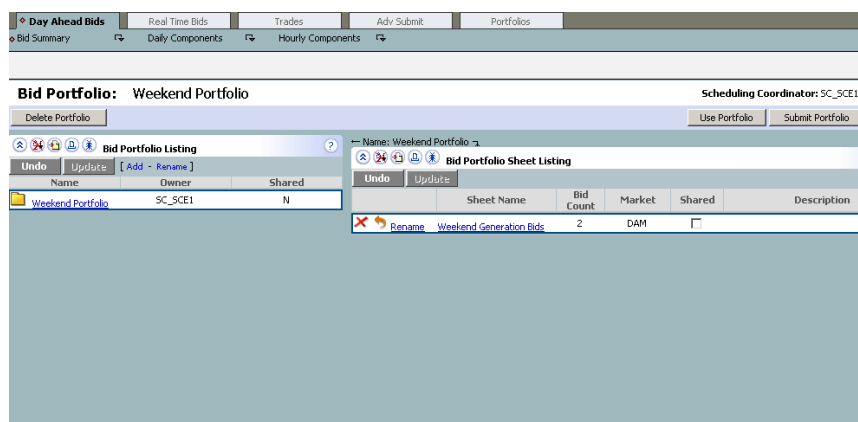


Figure 43 – Portfolio Sheet is now visible in Sheet Listing



6.3 Submitting Bids From Portfolio Displays

There are two ways to submit bids from portfolios

Submitting bids from Portfolios

- Submit entire portfolio that includes all sheets saved in the portfolio (see steps 10 – 13)
- Submit only individual sheets or individual bids within a sheet in a portfolio. (See steps 14 – 19)

10. Select Portfolio Tab and Select Manage Bids from sub-menu
11. Click on portfolio name you would like to use. Portfolio Sheets will become visible. (Figure 44)
12. Select Use Portfolio to copy all bids from all sheets into the portfolio to the summary screen. (Figure 45) To automatically submit portfolio without viewing its contents select Submit Portfolio button. (Figure 45)
13. All bids from all sheets in the portfolio will appear in the summary screen under the selected date and are ready to submit. (Figure 46)

Figure 44 – Select Portfolio

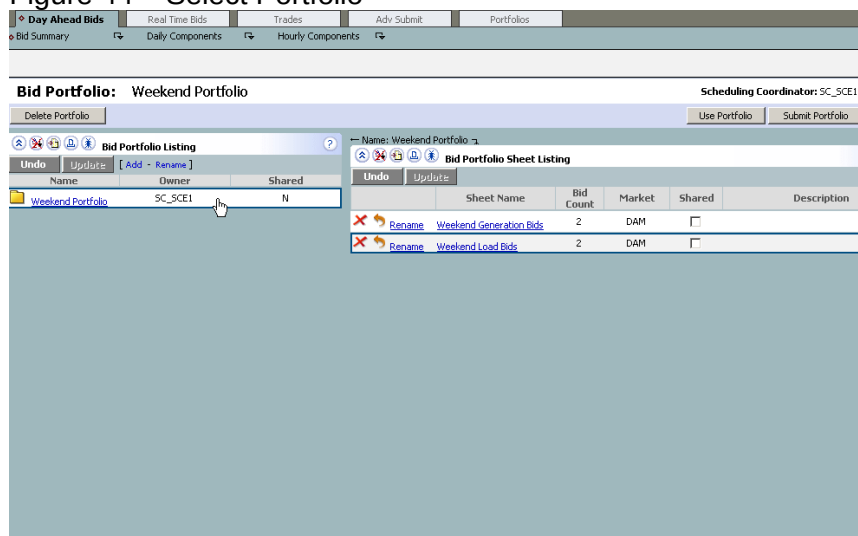
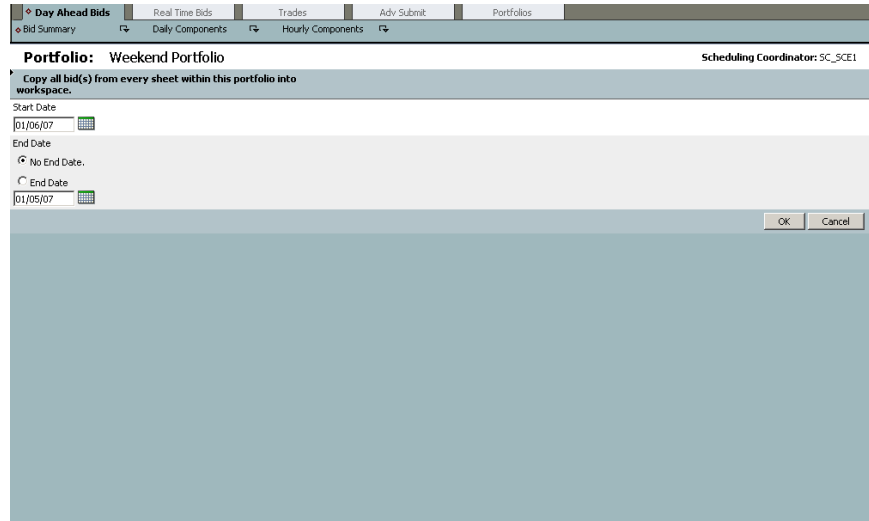


Figure 45 – After Selecting Use Portfolio or Submit Portfolio select date click OK



Portfolio: Weekend Portfolio Scheduling Coordinator: SC_SCE1

Copy all bid(s) from every sheet within this portfolio into workspace.

Start Date: 01/06/07

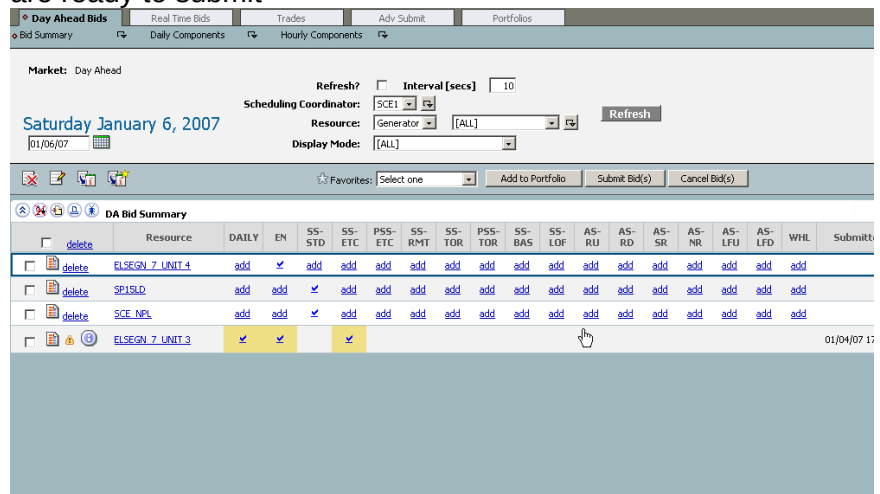
End Date: 01/05/07

☐ No End Date.

☐ End Date.

OK Cancel

Figure 46 – All bids from portfolio appear in summary screen and are ready to submit



Market: Day Ahead

Refresh? ☐ Interval [secs] 10

Scheduling Coordinator: SCE1

Resource: Generator

Display Mode: [ALL]

Refresh

DA Bid Summary

Resource	DAILY	EN	SS-STD	SS-ETC	PSS-ETC	SS-RMT	SS-TOR	PSS-TOR	SS-BAS	SS-LOF	AS-RU	AS-RD	AS-SR	AS-NR	AS-LFU	AS-LFD	WHL	Submit
ELSEGN 7 UNIT 4	add	✓	add	add	add	add	add	add	add	add	add	add	add	add	add	add	add	
SP1SLD	add	add	✓	add	add	add	add	add	add	add	add	add	add	add	add	add	add	
SCE_NPL	add	add	✓	add	add	add	add	add	add	add	add	add	add	add	add	add	add	
ELSEGN 7 UNIT 2	✓	✓	✓															

01/04/07 17

**Submitting
individual saved
sheets in a portfolio**

14. Select Portfolio Tab and Select Manage Bids from sub-menu
15. Click on portfolio name you would like to use. Portfolio Sheets will become visible. (Figure 44 above)
16. Click on individual portfolio sheet same you would like to submit (Figure 47)

17. Click on Use Bid(s) from Sheet and select one or more bids you would like to submit or select use and submit bids from sheet if you want to submit without viewing bids (Figure 48)
18. Select Trade Day for bid submission. (Figure 49)
19. Bids are copied to summary screen and are ready to submit

Figure 47 – Select portfolio sheet

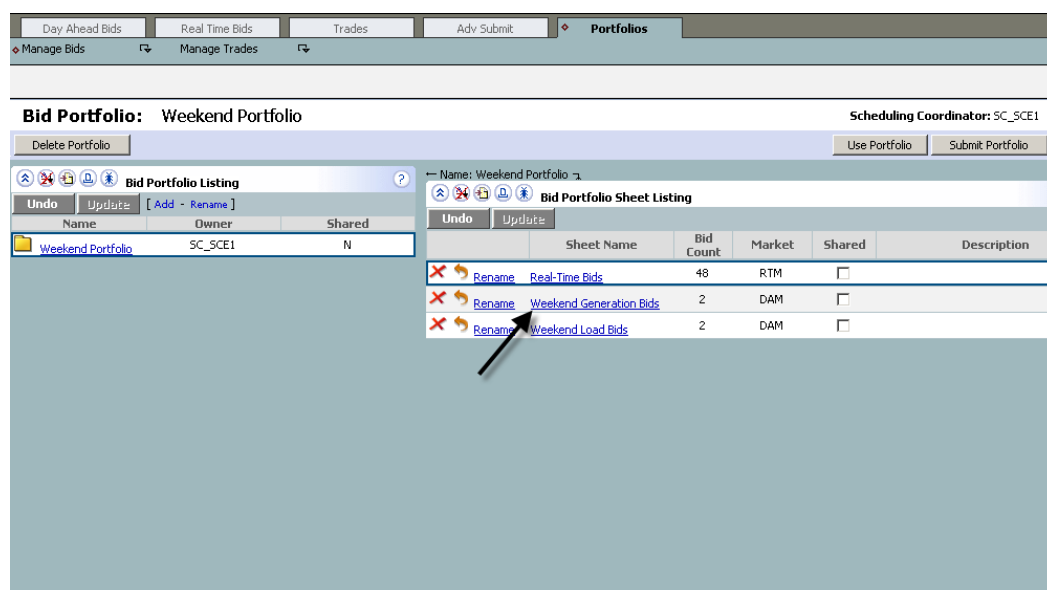
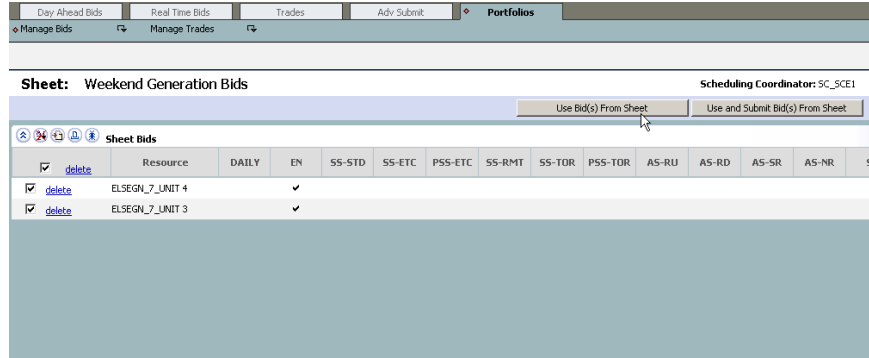


Figure 48 – Select Use Bids From Sheet

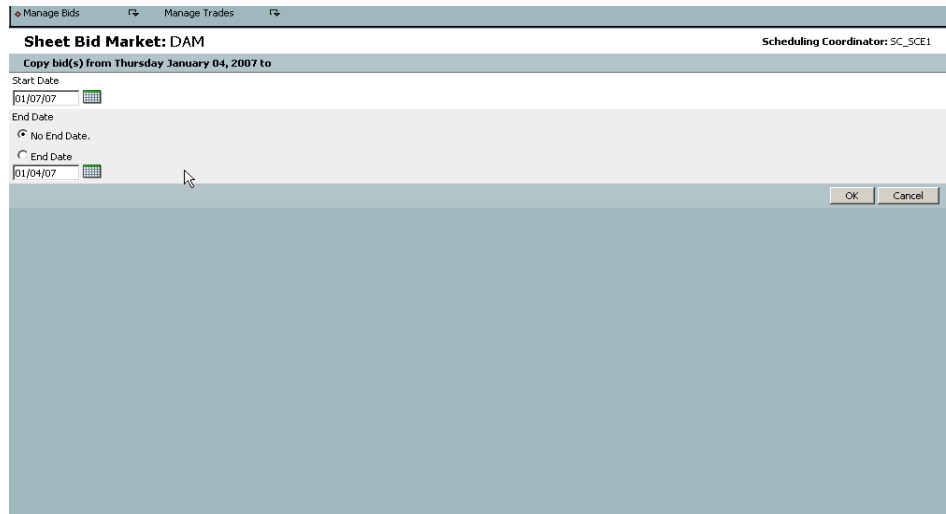


Sheet: Weekend Generation Bids Scheduling Coordinator: SC_SCE1

Use Bid(s) From Sheet Use and Submit Bid(s) From Sheet

	Resource	DAILY	EN	SS-STD	SS-ETC	PSS-ETC	SS-RMT	SS-TOR	PSS-TOR	AS-RU	AS-RD	AS-SR	AS-NR	S
☒ delete	ELSEGN_7_UNIT 4		✓											
☒ delete	ELSEGN_7_UNIT 3		✓											

Figure 49 – Select Trade Day



Sheet Bid Market: DAM Scheduling Coordinator: SC_SCE1

Copy bid(s) from Thursday January 04, 2007 to Friday January 05, 2007

Start Date: 01/07/07

End Date: 01/04/07

☒ No End Date.

☐ End Date

OK Cancel

Figure 50 - Bids are copied to summary screen and ready to submit

☒ **Day Ahead Bids**
☐ Real Time Bids
 ☐ Trades
 ☐ Adv Submit
 ☐ Portfolios

☐ Bid Summary
 ☐ Daily Components
 ☐ Hourly Components

Market: Day Ahead

Refresh? ☐ Interval [secs] 10
 Scheduling Coordinator: SCEI
 Resource: Generator [ALL]
 Display Mode: [ALL]

Sunday January 7, 2007
 01/07/07

Resource	DAILY	EN	SS-STD	SS-ETC	PSS-ETC	SS-RMT	SS-TOR	PSS-TOR	SS-BAS	SS-LOF	AS-RU	AS-RD	AS-SR	AS-NR	AS-LFU	AS-LFD	WHL	Submit
ELSEGN 7 UNIT 3	add	✓	add	add	add	add	add	add	add	add	add	add	add	add	add	add	add	add
ELSEGN 7 UNIT 4	add	✓	add	add	add	add	add	add	add	add	add	add	add	add	add	add	add	add

Bid [11020] -> [11032] copied successfully to: Sun, 7 Jan 2007 01/04/07 16:01:28 ✕
 Bid [11021] -> [11033] copied successfully to: Sun, 7 Jan 2007 01/04/07 16:02:15 ✕
 Bid [11020] -> [11034] copied successfully to: Sun, 7 Jan 2007 01/04/07 16:02:15 ✕

 California ISO Shaping a Renewed Future	SIBR – Scheduling Coordinator Users Guide	Version: 5.0 Date: 11/4/2014
--	--	---

7 Indicator Viewer Screen

The indicator Screen provides users with the ability to view special indicators that apply to ETC/TOR self-schedules, ECA/ACA Base Self-Schedules and Wheeling.

Since these types of schedules must be submitted balanced the Indicator screen allows users to view balance indicators which will display Y if the schedule is balanced or N if it is not balanced by Contract Reference, Base Reference and Wheeling Reference. In the case of ETC/TOR self-schedules the Priority Indicator is also displayed for each Contract Reference which shows “Y” if the ETC or TOR self-schedule is within its allotted entitlement amount or “N” if it is exceeding its entitlement amount.

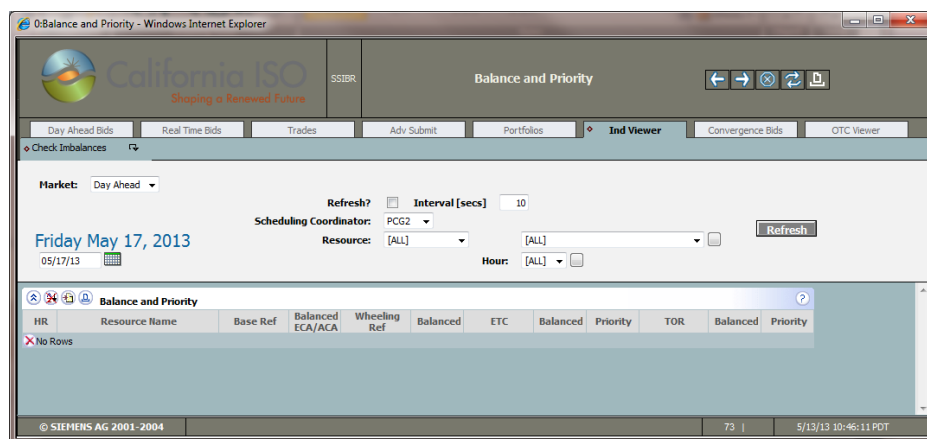
The following screen shots will show examples of the information displayed in the Indicator Screen.

7.1 Viewing Information in the Indicator Viewer Screen

Must be logged in to the SIBR system

20. Navigate to the Indicator Screen page by clicking on the IND Viewer tab in the SIBR menu and selecting the Check Imbalances Sub-Menu
21. Select Criteria from the drop down boxes which includes Market (DAM or RTM), Resource Type, Resource ID, and Hours. Click apply to save defined criteria. (Figure 51)
22. Indicator Information that is relevant for the selected Resource(s) bid(s) will be displayed on the screen. (Figure 52)

Figure 51 – Selecting Criteria in Indicator Viewer



Market: Day Ahead

Refresh? ☐ Interval [secs] 10

Scheduling Coordinator: PCG2

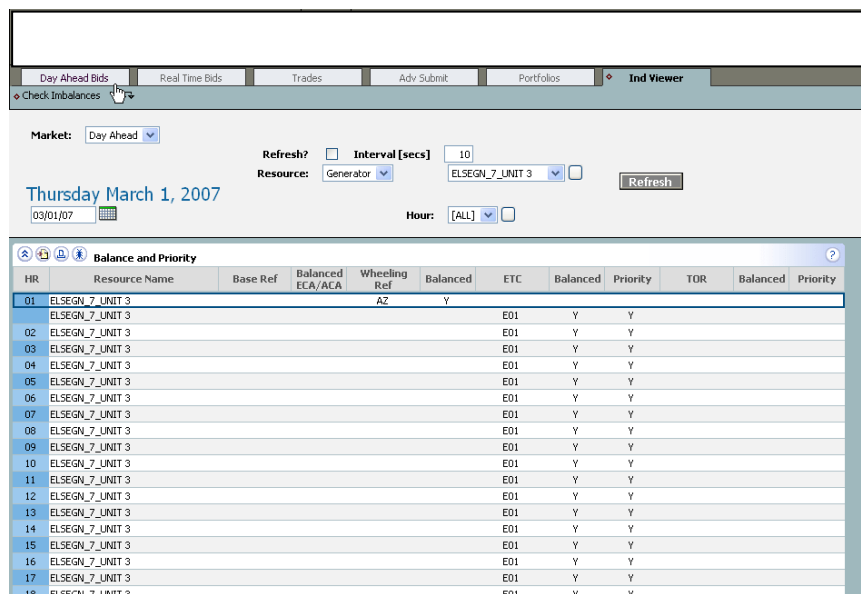
Resource: [ALL]

Hour: [ALL]

Refresh

HR	Resource Name	Base Ref	Balanced ECA/ACA	Wheeling Ref	Balanced	ETC	Balanced	Priority	TOR	Balanced	Priority
No Rows											

Figure 52 – Indicator Information is displayed in this example for Wheeling and ETC/TOR



Market: Day Ahead

Refresh? ☐ Interval [secs] 10

Scheduling Coordinator: Generator

Resource: ELSEGN_7_UNIT 3

Hour: [ALL]

Refresh

HR	Resource Name	Base Ref	Balanced ECA/ACA	Wheeling Ref	Balanced	ETC	Balanced	Priority	TOR	Balanced	Priority
01	ELSEGN_7_UNIT 3			AZ	Y						
02	ELSEGN_7_UNIT 3					E01	Y	Y			
03	ELSEGN_7_UNIT 3					E01	Y	Y			
04	ELSEGN_7_UNIT 3					E01	Y	Y			
05	ELSEGN_7_UNIT 3					E01	Y	Y			
06	ELSEGN_7_UNIT 3					E01	Y	Y			
07	ELSEGN_7_UNIT 3					E01	Y	Y			
08	ELSEGN_7_UNIT 3					E01	Y	Y			
09	ELSEGN_7_UNIT 3					E01	Y	Y			
10	ELSEGN_7_UNIT 3					E01	Y	Y			
11	ELSEGN_7_UNIT 3					E01	Y	Y			
12	ELSEGN_7_UNIT 3					E01	Y	Y			
13	ELSEGN_7_UNIT 3					E01	Y	Y			
14	ELSEGN_7_UNIT 3					E01	Y	Y			
15	ELSEGN_7_UNIT 3					E01	Y	Y			
16	ELSEGN_7_UNIT 3					E01	Y	Y			
17	ELSEGN_7_UNIT 3					E01	Y	Y			
18	ELSEGN_7_UNIT 3					PH1	Y	Y			

8 OTC Viewer Screen

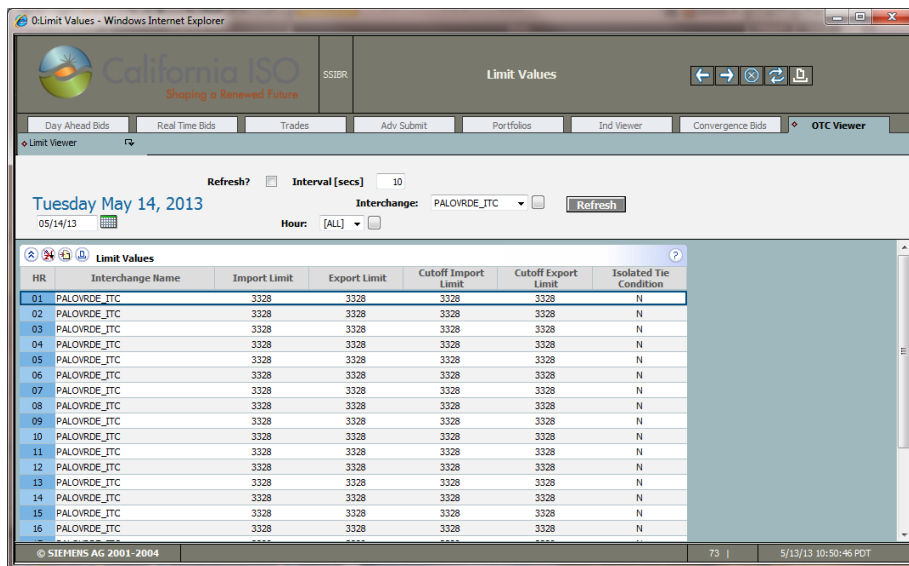
The OTC Screen provides users with the ability to view by Interchange name the Import and Export Limits that SIBR receives.

8.1 Viewing Information in the OTC Viewer Screen

Must be logged in to the SIBR system

1. Navigate to the OTC Viewer Screen page by clicking on the OTC Viewer tab in the SIBR menu and selecting the Check Limit Viewer Sub-Menu
2. Select Criteria from the drop down boxes which includes Interchange. (Figure 53)
3. Indicator Information that is relevant for the selected Interchange(s) will be displayed on the screen. (Figure 53)

Figure 53 – Example of OTC Viewer with Limits information displayed



HR	Interchange Name	Import Limit	Export Limit	Cutoff Import Limit	Cutoff Export Limit	Isolated Tie Condition
01	PALOVRDE_ITC	3328	3328	3328	3328	N
02	PALOVRDE_ITC	3328	3328	3328	3328	N
03	PALOVRDE_ITC	3328	3328	3328	3328	N
04	PALOVRDE_ITC	3328	3328	3328	3328	N
05	PALOVRDE_ITC	3328	3328	3328	3328	N
06	PALOVRDE_ITC	3328	3328	3328	3328	N
07	PALOVRDE_ITC	3328	3328	3328	3328	N
08	PALOVRDE_ITC	3328	3328	3328	3328	N
09	PALOVRDE_ITC	3328	3328	3328	3328	N
10	PALOVRDE_ITC	3328	3328	3328	3328	N
11	PALOVRDE_ITC	3328	3328	3328	3328	N
12	PALOVRDE_ITC	3328	3328	3328	3328	N
13	PALOVRDE_ITC	3328	3328	3328	3328	N
14	PALOVRDE_ITC	3328	3328	3328	3328	N
15	PALOVRDE_ITC	3328	3328	3328	3328	N
16	PALOVRDE_ITC	3328	3328	3328	3328	N



California ISO
Shaping a Renewed Future

SIBR – Scheduling
Coordinator Users Guide

Version: 5.0
Date: 11/4/2014

9 Energy Forecast Screen

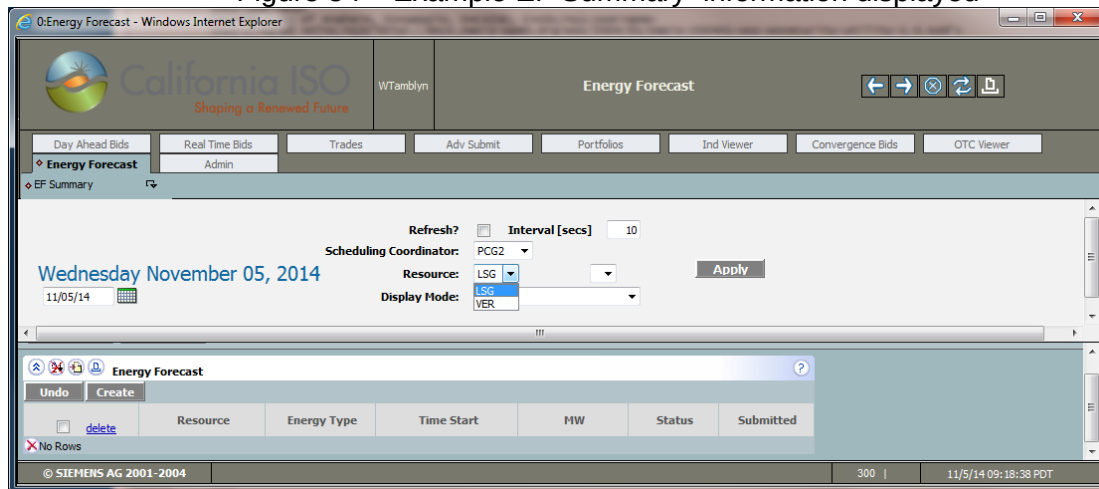
The Energy Forecast Screen is used to submit Energy Forecasts for Variable Energy Resources (VER) and Load Serving Generators (LSG).

9.1 Energy Forecast Screen

Must be logged in to the SIBR system and a resource must be eligible from Master File to be allowed to submit an Energy Forecast. This is an election on the RDT to allow SC submissions for Forecast data.

4. Navigate to the Energy Forecast Screen page by clicking on the Energy Forecast tab in the SIBR menu and selecting the EF Summary Sub-Menu
5. Select Criteria from the drop down boxes which includes Resource (VER or LSG). (Figure 54)
6. Indicator Information that is relevant for the selected Interchange(s) will be displayed on the screen. (Figure 54)

Figure 54 – Example EF Summary information displayed



0:Energy Forecast - Windows Internet Explorer

California ISO
Shaping a Renewed Future

WTamblyn

Energy Forecast

Day Ahead Bids Real Time Bids Trades Adv Submit Portfolios Ind Viewer Convergence Bids OTC Viewer

Energy Forecast Admin

EF Summary

Refresh? ☐ Interval [secs] 10

Scheduling Coordinator: PCG2

Resource: LSG

Display Mode: VER

Apply

Wednesday November 05, 2014

11/05/14

Energy Forecast

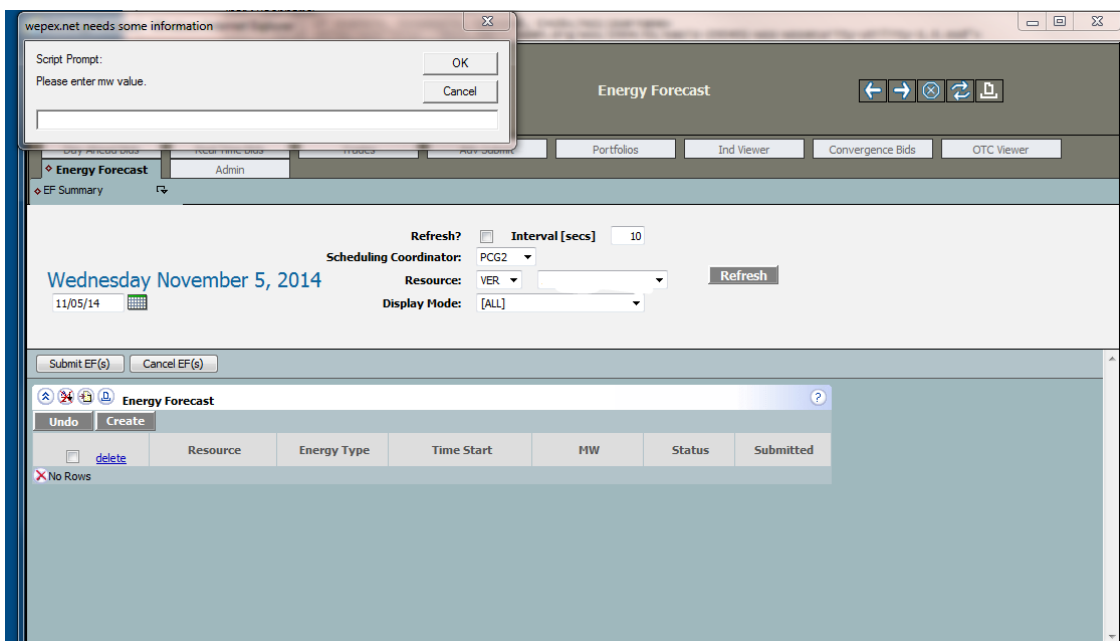
Undo Create

Resource	Energy Type	Time Start	MW	Status	Submitted
No Rows					

© SIEMENS AG 2001-2004 300 11/5/14 09:18:38 PDT

7. Once the resource is selected click on 'Create' button.
8. Enter a MW value for the Energy Forecast to be used. Then select OK. (Figure 55)
9. This will populate the forecast for then next set of available time periods for the horizon. And will be displayed on the screen. (Figure 56)
10. Select check box for intervals and then Submit EF. This will submit VER (Figure 57).

Figure 55 – Example EF Create information displayed



Script Prompt:
Please enter mw value.

OK
Cancel

Energy Forecast

Portfolios Ind Viewer Convergence Bids OTC Viewer

Energy Forecast Admin

EF Summary

Refresh? ☐ Interval [secs] 10

Scheduling Coordinator: PCG2

Resource: VER

Display Mode: [ALL]

Refresh

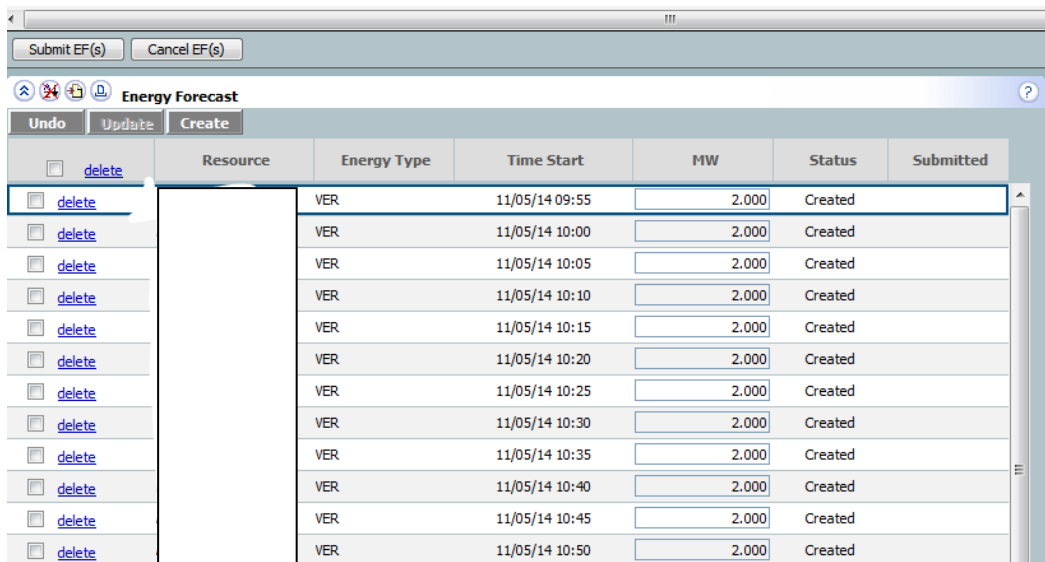
Submit EF(s) Cancel EF(s)

Energy Forecast

Undo Create delete

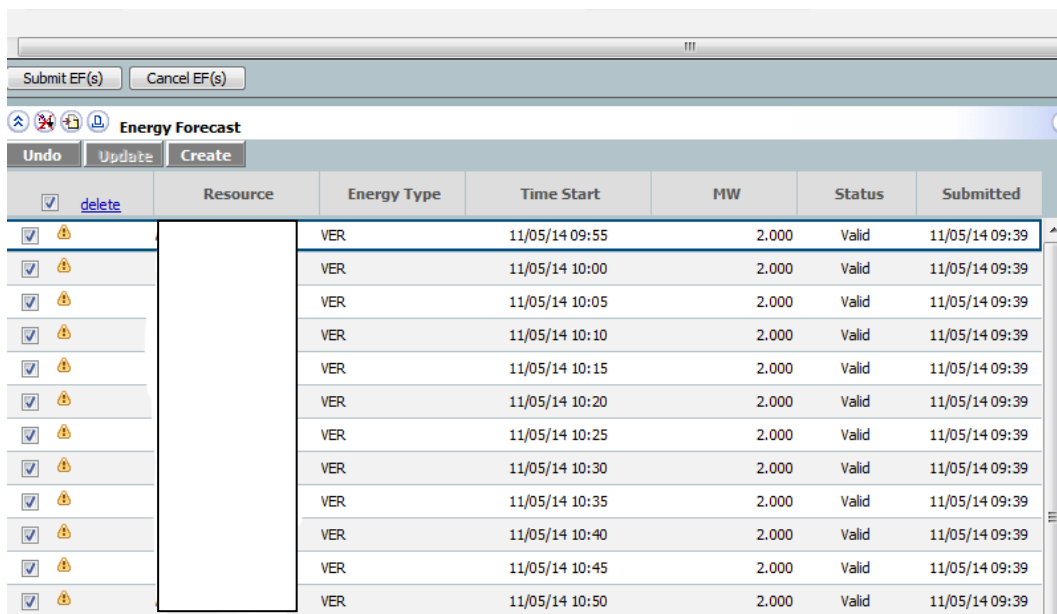
Resource	Energy Type	Time Start	MW	Status	Submitted
No Rows					

Figure 56 – Example EF MW information displayed



Resource	Energy Type	Time Start	MW	Status	Submitted
	VER	11/05/14 09:55	2.000	Created	
	VER	11/05/14 10:00	2.000	Created	
	VER	11/05/14 10:05	2.000	Created	
	VER	11/05/14 10:10	2.000	Created	
	VER	11/05/14 10:15	2.000	Created	
	VER	11/05/14 10:20	2.000	Created	
	VER	11/05/14 10:25	2.000	Created	
	VER	11/05/14 10:30	2.000	Created	
	VER	11/05/14 10:35	2.000	Created	
	VER	11/05/14 10:40	2.000	Created	
	VER	11/05/14 10:45	2.000	Created	
	VER	11/05/14 10:50	2.000	Created	

Figure 57 – Example EF MW information displayed



Resource	Energy Type	Time Start	MW	Status	Submitted
	VER	11/05/14 09:55	2.000	Valid	11/05/14 09:39
	VER	11/05/14 10:00	2.000	Valid	11/05/14 09:39
	VER	11/05/14 10:05	2.000	Valid	11/05/14 09:39
	VER	11/05/14 10:10	2.000	Valid	11/05/14 09:39
	VER	11/05/14 10:15	2.000	Valid	11/05/14 09:39
	VER	11/05/14 10:20	2.000	Valid	11/05/14 09:39
	VER	11/05/14 10:25	2.000	Valid	11/05/14 09:39
	VER	11/05/14 10:30	2.000	Valid	11/05/14 09:39
	VER	11/05/14 10:35	2.000	Valid	11/05/14 09:39
	VER	11/05/14 10:40	2.000	Valid	11/05/14 09:39
	VER	11/05/14 10:45	2.000	Valid	11/05/14 09:39
	VER	11/05/14 10:50	2.000	Valid	11/05/14 09:39

10 Base Schedule Aggregation Portal (BSAP)

The BSAP is used for the Energy Imbalance Market (EIM) to submit Base Schedules for both Participating and Non-Participating resources outside the CAISO Control Area with a neighboring Balancing Area Authority (BAA).

10.1 BSAP Screens

Must be logged in to the BSAP system and a resource must be eligible from Master File to be allowed to submit Base Schedules.

There are two screens currently (Base Schedule and Base Balance Viewer)

10.1.1 BSAP Base Schedule

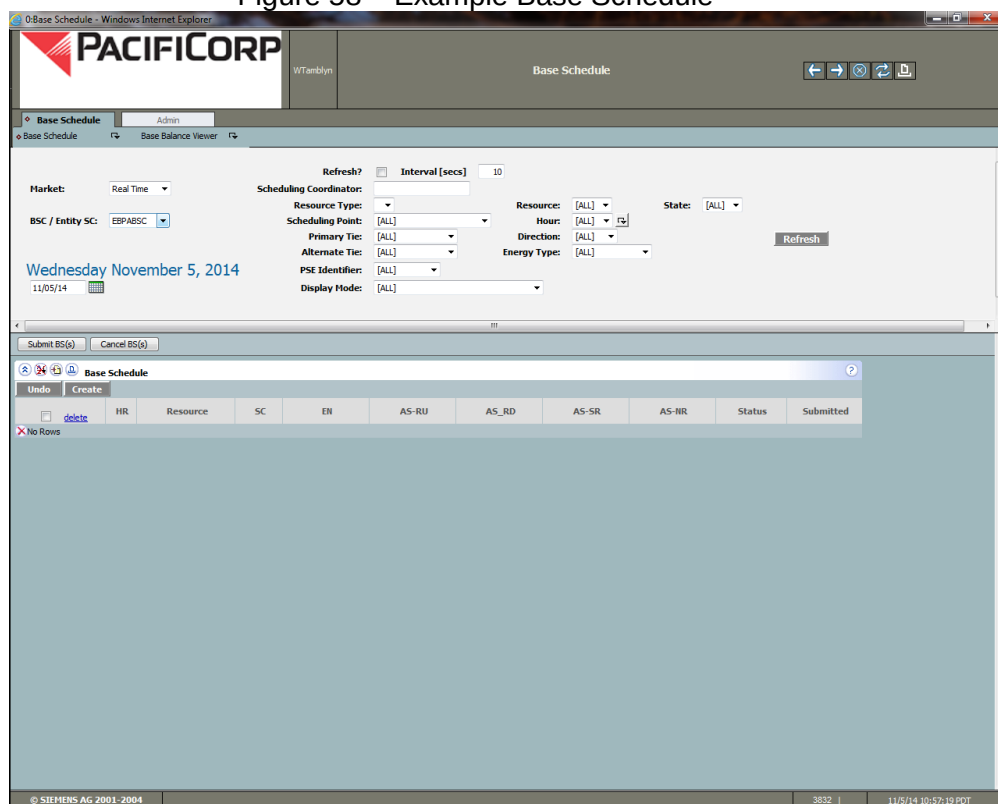
1. Navigate to the Base Schedule Screen page by clicking on the Base Schedule tab in the BSAP menu and selecting the Base Schedule Sub-Menu
2. Select Criteria from the drop down boxes which includes:

Scheduling Coordinator (SC of Participatin or Non-Participating resource)	
Resource Type	Resource
Scheduling Point	Hour
Primary Tie	Direction
Alternate Tie	Energy Type
PSE Identifier	

 (Figure 58)

Figure 58 – Example Base Schedule (next page)

Figure 58 – Example Base Schedule



PACIFICCORP

W.Tamblyn

Base Schedule

Base Schedule Admin

Base Schedule Base Balance Viewer

Market: Real Time

BSC / Entity SC: EBPABSC

Refresh? ☐ Interval [secs] 10

Scheduling Coordinator:

Resource Type: [ALL]

Scheduling Point: [ALL]

Primary Tie: [ALL]

Alternate Tie: [ALL]

PST Identifier: [ALL]

Display Mode: [ALL]

Resource: [ALL]

Hour: [ALL]

Direction: [ALL]

Energy Type: [ALL]

State: [ALL]

Refresh

Wednesday November 5, 2014

11/05/14

Submit BS(s) Cancel BS(s)

Base Schedule

Undo Create

delete

HR	Resource	SC	EN	AS-RU	AS_RD	AS-SR	AS-HR	Status	Submitted
No Rows									

© SIEMENS AG 2001-2004

3832 | 11/5/14 10:57:19 PDT

- Base Schedules require that the Scheduling Coordinator is entered in order to create a Base Schedule.
- Once the resource is selected click on 'Create' button.
- Enter a MW value for the Base Schedule to be used. Then select Update. (Figure 59)

Figure 59 – Example Base Schedule Create

Base Schedule Admin

Base Schedule Base Balance Viewer

Market: Real Time

BSC / Entity SC: EPACBSC

Refresh? ☐ Interval [secs] 10

Scheduling Coordinator: PAC1

Resource Type: Generator

Scheduling Point: [ALL]

Primary Tie: [ALL]

Alternate Tie: [ALL]

PSE Identifier: [ALL]

Display Mode: View Edited Base Schedule(s)

Resource: [Resource]

Hour: [ALL]

Direction: [ALL]

Energy Type: [ALL]

Refresh

Wednesday November 5, 2014

11/05/14

Submit BS(s) Cancel BS(s)

Base Schedule

Undo Update Create

	HR	Resource	SC	EN	AS-RU	AS_RD	AS-SR	AS-NR	Status	Submitted
☐ delete	13		PAC1	2.000					Created	
☐ delete	14		PAC1	2.000					Created	
☐ delete	15		PAC1	2.000					Created	
☐ delete	16		PAC1	2.000					Created	
☐ delete	17		PAC1	2.000					Created	
☐ delete	18		PAC1	2.000					Created	
☐ delete	19		PAC1	2.000					Created	
☐ delete	20		PAC1	2.000					Created	
☐ delete	21		PAC1	2.000					Created	
☐ delete	22		PAC1	2.000					Created	
☐ delete	23		PAC1	2.000					Created	
☐ delete	24		PAC1	2.000					Created	

6. Select check box for intervals and then Submit BS.
This will submit the Base Schedules (Figure 60).

Figure 60 – Example Base Submit displayed



		HR	Resource	SC	EN	AS-RU	AS_RD	AS-SR	AS-NR	Status	Submitted
☒	delete	13		PAC1	2.000					Created	
☒	delete	14		PAC1	2.000					Created	
☒	delete	15		PAC1	2.000					Created	
☒	delete	16		PAC1	2.000					Created	
☒	delete	17		PAC1	2.000					Created	
☒	delete	18		PAC1	2.000					Created	
☒	delete	19		PAC1	2.000					Created	
☒	delete	20		PAC1	2.000					Created	
☒	delete	21		PAC1	2.000					Created	
☒	delete	22		PAC1	2.000					Created	
☒	delete	23		PAC1	2.000					Created	
☒	delete	24		PAC1	2.000					Created	

7. Base Schedules processed and valid. (Figure 61)

Figure 61 – Example EF MW information displayed

☐		13		PAC1	111.100	Valid	11/04/14 21:01
☐		14		PAC1	2.000	Valid	11/05/14 11:23
☐		15		PAC1	2.000	Valid	11/05/14 11:23
☐		16		PAC1	2.000	Valid	11/05/14 11:23
☐		17		PAC1	2.000	Valid	11/05/14 11:23
☐		18		PAC1	2.000	Valid	11/05/14 11:23
☐		19		PAC1	2.000	Valid	11/05/14 11:23
☐		20		PAC1	2.000	Valid	11/05/14 11:23
☐		21		PAC1	2.000	Valid	11/05/14 11:23
☐		22		PAC1	2.000	Valid	11/05/14 11:23
☐		23		PAC1	2.000	Valid	11/05/14 11:23
☐		24		PAC1	2.000	Valid	11/05/14 11:23

11 FAQ

Whenever a subject like “user interface design” is discussed, there are almost always a lot of questions. This chapter attempts to answer some of those questions. We have attempted to categorize the questions under chapter headings.

11.1.1 General Questions

What is this Rules Engine?

There are rules (actually several hundred of them) about what the content of a bid must be in order for that bid to be considered by the system. The Rules Engine is the system component that validates bids to ensure that they contain all the correct components, that the values in those components are correct, etc.

When Does the Rules Engine Run?

When you submit a bid, the system responds immediately to acknowledge that the bid has been submitted. The bid is stored in the database and queued for consideration by the Rules Engine. The Rules Engine actually looks at each bid multiple times, as is explained in Chapter 1.2.1. Briefly:

5. In the “Bid Content” step, the Rules Engine validates that all required contents of the bid are present.
6. In the “Bid Processing” step, the Rules Engine validates the bid for consideration in the target market period. Depending upon when the bid is submitted relative to the target market period, this step may be performed multiple times. Depending upon agreements between the bidding vendor and CAISO, the bid may be modified in this step.
7. After market close for the target market period, the Bid Processing step is repeated, using the latest load predictions, Master File data, etc. for the target period.

What’s a Master File? You Talk About It a Lot.

There are a lot of so-called “static data” associated with resources. These include such things as maximum generator outputs, forbidden regions, reference ramp rates, fuel type, location, and a lot of other things that either don’t change or change only infrequently. Rather than require the time-consuming and error-prone entry of these for every bid, they are stored by the system and updated daily.

Data in the Master File are required for bid validation, and although Master File data are referred to as “static data”, they *may* change – even

 California ISO Shaping a Renewed Future	SIBR – Scheduling Coordinator Users Guide	Version: 5.0 Date: 11/4/2014
--	--	---

if only rarely. That is why every bid is (re-) validated after the Master File update for the target date.

What Notifications Do I Receive?

When a bid is submitted, the system provides feedback as soon as bid information has been written to the system database (almost immediately).

Additional feedback is provided each time the Rules Engine considers a bid.

But, I Might Not Be Around When the Rules Engine Runs. How Do I Find Out About My Bid?

The Rules Engine produces output that identifies any problem with a bid that will prevent that bid from being considered by the system. That output is stored in the system database until the next time you log in. At that time, the system will be able to inform you of the status of your bid(s) and display any error messages and / or notifications about whether and how a bid has been modified by the system.

Note that the final Rules Engine run is after market close. At this point, you receive the final status of your bid.

Can I Change a Bid? When? How?

Yes. You can change a bid at any time up to the market for the target period closes. To modify a bid, you use the same user interface screens that were used to create the bid. Bring up the transaction page; specify a resource and a bid period and the bid data will appear. Modify it and click the submit button again to replace the original bid with the modified bid.

What Happens To the Original Bid When I Resubmit?

Basically, the system remembers every bid that has ever been submitted. When a modified bid is re-submitted, the original bid is marked so that it will not be considered for use. However, the SC who submitted it may view it.

What About Canceling Bids?

Canceling a bid is similar in many ways to re-submitting a bid. The canceled bid is marked so that it is not considered for use.

Do I Have to Cancel a Bid Before I Resubmit?

No. When you resubmit a bid for the same resource and market period, it replaces the existing bid (if there is one). There is no need to cancel the existing bid first.

11.1.2 Questions About Bids

Can a Bid Contain More Than One Resource?

A bid is strictly defined by the rules engine as being for one resource and for one bid period (in the case of a day-ahead bid, for example, this would be one 24 hour period). However, the user interface is designed to allow you to enter data for multiple resources on the same screen. However, these become multiple bids when they are submitted.

Can I Submit a Partial Bid?

You can, and it may even be accepted. Bids undergo two basic validation steps – the first verifies that all required content is included in the bid; the second validates those contents (and potentially modifies them). The absence of required components can cause the bid to be rejected outright. However, in some cases, the bid modification process can fill in omissions. In such a case, the modified bid could be accepted.

You can also create a partial bid, save it (without submitting), complete it at some later time, and then submit it.

So, What Constitutes a Complete Bid?

A complete bid will include all commodities and self-schedules for a resource that a user intends to submit to the CAISO Day-Ahead or Real-Time market. Some generating resources may have certain requirements that more strictly define what will constitute a complete bid.

If My Bid is Rejected, Can I See What Was Wrong?

Yes. The “Bid Overview” page provides a listing of all bids that are known to the system, along with their current status. From this page, it is possible to recall bid information from any step in the process for viewing. You can view your original bid and any modified (either by you or by the system) version(s). In the case of rejected bids, you can view all messages generated by the Rules Engine?

If My Bid is Modified, Can I See What Was Changed?

Yes. The system stores the submitted bid. If the bid was automatically modified by the system, the modified version is also stored. If a bid is re-submitted, both the original and the new version are stored. The “Bid Overview” page provides a listing of all bids that are known to the system, along with their current status. From this page, it is possible to recall bid information from any step in the process for viewing. If a bid is modified by the system, you can view the original bid that you submitted, along with the modified version on the same page.

What About “Short” and “Long” Days?

When using the SIBR GUI to enter a bid for a “short” or 23-hour day, the bid entry screen will contain only 23 hours, numbered 1 through 23. The “long” (25-hour) day will have 25 hours, numbered hour 1, 2, 2*, 3, 4 etc.

Can I Re-Submit A Modified Bid?

Yes. This is true for both “conditionally modified” and “modified” bids. In both cases, the new bid replaces the old and will be sent through the full validation process again. This process can be repeated until the designated market closes.

What Happens If I Submit The Same Bid Twice?

The system allows only one bid to be active for a resource for each target trading day or trading hour in the case of the Real-Time Market. If you submit multiple bids for the same resource and date, the newer bid will replace the older. The older bid is effectively canceled and will no longer be considered by the system. However, all bids that have been submitted are stored by the system, so the older bid will be available for viewing by a valid SC.

11.1.2.1 Recurring Bids

Can I Submit a Bid for Multiple Days?

Yes, but it helps to understand what really happens behind the curtain...When you submit a “bid” for seven days, what is really happening behind the scenes is that the system creates 7 separate bids and submits each. Each bid goes through validation (and potential modification) steps separately.

Each bid will be validated and potentially conditionally modified shortly after it is submitted. But, remember in our overview (Chapter 1.2.1), we talked about the Master File, Master File updates, and how they may affect the validity of a bid? Specifically, before a bid becomes a Clean Bid, it must be validated using data from the Master File for the target date. This means that each of the seven bids will be validated once again after market close (and Master File update) for the target trading date.

How are Recurrent Bids Stored?

When an SC submits a recurrent bid, the system actually creates and stores one bid for each day of the recurrent series. That is, if the SC creates a bid and submits it for an entire week, seven bids are created.

Can I Modify Just One Day of a Recurrent Bid?

Yes. Since the system creates a unique bid for each day of recurrence, you may modify the bid for one day without affecting the others.

What If I Want To Modify Every Day?

Simply choose the first day you wish to modify. Modify that bid and resubmit it as a recurrent bid. The modified bid will be replicated by the system for each day of recurrence and will replace any existing bid.

How About Canceling a Single Day, Multiple Days?

The story here is the same as for modifying a single day of a recurrent bid. Select the day you want to cancel and cancel it. All other bids in the recurrent series will remain in the system. The user interface also allows you to cancel multiple days.

11.1.3 Questions About Templates

What's a Template?

A template is a bid without a market date that can be saved for future use as a pattern for a bid to be submitted. Templates are accessed through a user interface feature called "favorites". By saving one or more templates, an SC can quickly create bids.

Are Templates Validated?

No, the system does not validate templates. However, any bid that has been submitted can be used to create a template. Keep in mind that what is valid today may not be valid tomorrow due to Master File changes.

Can I Apply a 24-hour Template to a Long or Short Day?

Yes. However, if you apply a 24-hour template to a 23-hour day, the last hour of the day is eliminated. If you apply a 24-hour template to a 25-hour day, the last hour will have values of zero. This may not be what you want, so the safest course is to create a special set of templates for long and short days.

11.1.4 Questions About Users and Permissions

What's the Difference Between a User and an SC?

These terms do tend to get a bit mixed up and sometimes used interchangeably. Strictly defined, a user is a person who has a valid login to the system.

There are a number of Scheduling Coordinators, each of whom has responsibility for providing bids for a collection of resources. As defined in the SIBR system, a Scheduling Coordinator is actually a "role" that is assigned to a user.

What's a Role, Then?

In simple terms, a "role" is something a user is permitted to do. For example, in a typical operating system, there may be an "administrator" role. If a user is assigned the administrator role, that user has the privileges and is able to perform the tasks required to administer the system; such tasks may include installing software, creating users, changing system operating priorities, etc. Someone who has been assigned a "user" role has the privileges and can perform the tasks of a system user (e.g., create and edit files, print, run a web browser, etc.).



**Can a User Have More
Than One SC Roles?**

Yes. This will occur when an organization uses multiple SCIDs. A user given access to more than one SC role will have access to submit and review bids for multiple SCIDs. This eliminates the current issue where each SCID must have a separate login.

Appendix A Glossary

Accepted Bid	A Submitted Bid that has passed Bid Content.
Active Day	The first Trading Day in the Market Horizon of a given Day-Ahead Market.
Active Dispatch Interval	The Dispatch Interval that starts at or after 10min later than the Energy Forecast submission time. For example, if the Energy Forecast submission time is 0:00:00, the Active Dispatch Interval is 0:10:00-0:15:00; if the Energy Forecast submission time is 0:01:17, the Active Dispatch Interval is 0:15:00-0:20:00.
Active Hour	The second Trading Hour in the Market Horizon of a given Real-Time Market.
Aggregate Generating Resource	A Generating Resource that is a group of Generating Resources scheduled or dispatched as a single Generating Resource.
Aggregate Participating Load Resource	A Participating Load Resource that is a group of Participating Load Resources scheduled or dispatched as a single Participating Load Resource.
Alternate Inter-Tie	The Inter-Tie optionally associated with an Inter-Tie Resource for tagging Schedules and Awards from associated Bids when the Open Tie Status is set for these Bids.
Ancillary Service	A service that supports the transmission of Energy from Supply to Demand to maintain the reliable operation of the ISO Control Area in accordance with WECC standards.
Ancillary Service Award	An Award for an Ancillary Service.
Ancillary Service Bid Ceiling	The maximum price allowed in an Ancillary Service Bid Component.
Ancillary Service Bid Component	A Bid Component for Ancillary Services.
Ancillary Service Bid Floor	The minimum price allowed in an Ancillary Service Bid Component.
Ancillary Service Capacity	The Capacity designated for an Ancillary Service.

Ancillary Service Obligation	The Demand for which a Scheduling Coordinator is financially responsible for Ancillary Services.
Ancillary Service Obligation Trade	A Trade of an Ancillary Service Obligation.
Ancillary Service Self-Provision	An Ancillary Service provided by a Scheduling Coordinator to primarily meet its own Ancillary Service Obligation.
Ancillary Service Self-Provision Award	An Ancillary Service Award from Ancillary Service Self-Provision.
Ancillary Service Self-Provision Bid Component	A Bid Component for Ancillary Service Self-Provision.
Ancillary Service Self-Provision Capacity	The Capacity designated for an Ancillary Service Self-Provision.
Approved	The Credit Indicator and Credit Status of a Virtual Resource Bid that has received credit.
Attaining Control Area	The Control Area that has operational control over a Pseudo-Tie within another Control Area (Native Control Area).
Average Fuel Cost	The ratio of fuel cost into Energy for a Generating Resource at a given Operating Level.
Average Heat Rate	The ratio of heat conversion into Energy for a Generating Resource at a given Operating Level.
Award	The Ancillary Service Capacity selected from a Resource in a Trading Hour of a Day-Ahead Market or a Commitment Interval of a Real-Time Market, or the RUC Capacity selected from a Resource in a Trading Hour of a Day-Ahead Market.
Balance Indicator	An indicator for each TOR/ETC and Trading Hour that indicates whether the corresponding TOR/ETC has passed or failed TOR/ETC balancing validation. An indicator for each Wheeling Bid Component that indicates whether the corresponding Wheeling Transaction is balanced or not.
Balancing Authority Area	A Control Area.
Base Energy Schedule	The hourly Energy Schedule of an EIM Resource that predates the EIM; it is fixed and not settled in the DAM; it is the reference for imbalance Energy in the RTM.

Base Generating Resource State	The Generating Resource State of an EIM Resource that predates the EIM; it is fixed in the DAM; it is fixed for EIMNPR in the RTM.
Base Load	The amount of electric power consumption of a Participating Load Resource that is not issued a Dispatch Instruction for Load Reduction.
Base Net Interchange	The Net Interchange attributed to Base Energy Schedules.
Base Non-Spinning Reserve Schedule	The hourly Non-Spinning Reserve Schedule of an EIM Resource outside of EIM; it is ignored in the DAM and the RTM and provided only for information and future functionality.
Base Regulation Down Schedule	The hourly Regulation Down Schedule of an EIM Resource outside of EIM; it is ignored in the DAM and the RTM and provided only for information and future functionality.
Base Regulation Up Schedule	The hourly Regulation Up Schedule of an EIM Resource outside of EIM; it is ignored in the DAM and the RTM and provided only for information and future functionality.
Base Schedule	The hourly Energy or Ancillary Service Schedule of an EIM Resource that predates the EIM.
Base Schedule Coordinator	A Market participant authorized by the ISO to submit Base Schedules for an EIM Resource.
Base Schedule Period	The time period for which a Base Schedule applies.
Base Spinning Reserve Schedule	The hourly Spinning Reserve Schedule of an EIM Resource outside of EIM; it is ignored in the DAM and the RTM and provided only for information and future functionality.
Best Operating Reserve Ramp Rate	The Operating Reserve Ramp Rate of a Generating Resource under best operating conditions.
Best Operational Ramp Rate Curve	The Operational Ramp Rate Curve of a Generating Resource under best operating conditions.
Best Regulating Ramp Rate	The Regulating Ramp Rate of a Generating Resource under best operating conditions.
Bid	An offer for the supply or demand of a Commodity in a Market.

Bid Component	A section of a Bid that contains information used in Market activities.
Bid Content	The determination that a Bid or a Bid Component complies with the structural rules so that it can be used in a Market.
Bid Deletion	The process where a Resource Bid is deleted after the relevant Market Close Time.
Bid Fill Option	A SIBR initialization parameter that controls the Multi-Period Bid Generation in the DAM: No: No Multi-Period Bids are generated; Market Accepted Bids are used as Source Bids when available. Last: Multi-Period Bids are generated only for the Trading Days in the Day-Ahead Market Horizon after the last Trading Day when a Market Accepted Bid exists; that Market Accepted Bid is used as Source Bid. History: Multi-Period Bids are generated for each applicable Trading Day in the Day-Ahead Market Horizon using the DAM Clean Bid of the applicable History Day as Source Bid.
Bid Final Processing	The process where a Resource Bid is modified after the relevant Market Close Time.
Bid Generation	The process where a Resource Bid is generated after the relevant Market Close Time.
Bid Identification	The section of a Bid that contains information used to identify the Bid.
Bid Period	The time period for which a Bid applies.
Bid Processing	The modification of a Valid Bid to produce a Clean Bid or the creation of a Clean Bid.
Bid Special Processing	The process before the relevant Market Close Time where a Resource Bid is examined for potential modification after that Market Close Time.
Bid Status	The validation status of a Bid in SIBR: Created, Submitted, Rejected, Accepted, Invalid, Temporary Valid, Conditionally Valid, Conditionally Modified, Valid, Modified, Obsolete, Canceled, Clean, and STUC.
Bid Submission	The submission of a Bid to a Market.

Bid Submission Time	The time when a Bid is submitted to a Market.
Bid Type	An Inter-Tie Transaction attribute that indicates a Physical Resource (P) or Virtual Resource (V).
Bid Validation	The determination that a Bid or a Bid Component complies with the Market rules so that it can be used in a Market.
Branch Group	An oriented group of Network Branches.
Canceled	The Bid Status of a Bid that has been canceled by the User who originally submitted it. The Credit Status of a Virtual Resource Bid that has been sent to CTS for Credit Release.
Canceled Bid	A Bid that has been canceled by the User who originally submitted it.
Capacity	The amount of electric power that a Network component can produce, transmit, or consume.
Capacity Limit	A limit for the total Generating Resource Capacity that can be used for Commodities in DAM and RTM.
Capacity Limit Indicator	An indicator specifying that the Capacity Limit must be enforced in IFM.
Clean Bid	A Bid ready to be used in a Market.
Commitment Interval	The 15-minute Trading Interval of a Real-Time Market.
Commitment Status	The designation of the operating state of a Resource with discrete modes of operation.
Commodity	Energy, Ancillary Service Capacity, or RUC Capacity.
Conditionally Modified Bid	A Bid modified by SIBR in Bid Processing before the Master File update for the relevant Trading Day.
Conditionally Valid Bid	A Bid that has passed Bid Processing before the Master File update for the relevant Trading Day.
Constrained Output Generator	A Generating Resource with an operating range between its registered Maximum Capacity and Minimum Load equal to the Quantity Precision.
Contingency Dispatch Indicator	An indicator specifying that Spinning Reserve and Non-Spinning Reserve must be dispatched only

	under contingency.
Control Area	An electrical system that balances Supply and Demand to maintain system frequency and Net Interchange with other interconnected Control Areas in accordance with WECC standards.
Convergence Bidding	The submission of Virtual Resource Bids in the Day-Ahead Market.
Convergence Bidding Entity	An Entity authorized for Convergence Bidding for one or more SCs.
Cooling Time	The time that elapses between a Shut-Down Instruction and the next Start-Up Instruction issued to a Resource.
Cooling Time Break Point	A Cooling Time that defines the start or the end of a segment in a Start-Up Time Bid Curve or a Start-Up Cost Bid Curve.
Created Bid	A Bid that has been created by a User.
Credit Indicator	An indicator received from CTS for a Virtual Resource Bid indicating whether there is sufficient credit collateral to support that Bid: Approved, Disapproved, and Error.
Credit Release	The action of sending a Virtual Resource Bid to CTS to release credit.
Credit Request	The action of sending a Virtual Resource Bid to CTS to request credit.
Credit Status	The financial status of a Bid in SIBR: Pending Request, Pending Response, Approved, Disapproved, and Canceled.
Credit Tracking System	The credit management and approval system.
CTS Communication Status	The administratively set and persistently maintained in SIBR status of SIBR-CTS communication: On: allows sending Bids to CTS; Off: suppresses sending Bids to CTS.
Custom Generation Aggregation Point	The Generation Aggregation Point that includes a custom set of Generating Resources in a BAA; it may be used as an Inter-Tie Scheduling Point.



Custom Load Aggregation	A Non-Participating Load Resource aggregation scheme with resource-specific Distribution Factors that are submitted with the Bid and for which the distributed Energy is settled at the relevant Distribution Location marginal prices.
Day-Ahead Award	An Award produced by a Day-Ahead Market.
Day-Ahead Base Schedule Cutoff Time	The latest time when Base Schedules can be submitted in the DAM for the Active Day.
Day-Ahead Demand Forecast Cutoff Time	The cutoff time used in the DAM to retrieve the Demand Forecast for an EIM BAA for the Active Day for Base Schedule balancing validation.
Day-Ahead Generating Resource State	The Generating Resource State that is associated with the Day-Ahead Schedule.
Day-Ahead Market	A Market with a Market Horizon of consecutive Trading Hours that span one or more consecutive Trading Days. This Market is conducted the day before the start of its Market Horizon. Schedules and Awards are financially binding for the first Trading Day and advisory for the remaining Trading Days in the Market Horizon.
Day-Ahead Market Horizon	The number of Trading Days in the Market Horizon of a given Day-Ahead Market.
Day-Ahead Non-Spinning Reserve Award	A Day-Ahead Award for Non-Spinning Reserve.
Day-Ahead PT Self-Schedule	The portion of the Day-Ahead Schedule identified as PT Self-Schedule.
Day-Ahead Regulation Down Award	A Day-Ahead Award for Regulation Down.
Day-Ahead Regulation Up Award	A Day-Ahead Award for Regulation Up.
Day-Ahead RUC Award	A Day-Ahead Award for RUC Capacity.
Day-Ahead Schedule	A Schedule produced by a Day-Ahead Market.
Day-Ahead Spinning Reserve Award	A Day-Ahead Award for Spinning Reserve.
Daytime Type	The daytime certification for a Virtual Resource Location: ON: valid only during On-Peak Trading Hours; OFF: valid only during Off-Peak Trading Hours; ALL: valid during all Trading Hours.
Default Ancillary Service Bid Price	The default Ancillary Service Bid Price used for a Resource with no Ancillary Service Bid

	Component.
Default Energy Bid Price	The default Energy Bid Price used for a Resource with no Energy Bid Component and no registered cost information.
Default Generation Aggregation Point	The Generation Aggregation Point that includes all Generating Resources in a BAA; it may be used as an Inter-Tie Scheduling Point.
Default Regulation Mileage Bid Price	The default Regulation Mileage Bid Price used for a Resource with no Regulation Mileage Bid Component.
Default RUC Bid Price	The default RUC Bid Price used for a Resource with no RUC Bid Component.
Deleted Bid	A Clean Bid deleted by SIBR after the relevant Market Close Time.
Demand	The collective of Resources that demand Energy (i.e., Load Resources and Export Resources).
Demand Forecast	The forecast for the hourly Demand of a BAA in the FNM for a Trading Day in the DAM or a Trading Interval in the RTM.
Direction	An Inter-Tie Transaction attribute that indicates Import (I) or Export (E).
Disapproved	The Credit indicator and Credit Status of a Virtual Resource Bid that has been denied credit.
Discrete Reliability Demand Response Resource	A RDRR that should be dispatched discretely (on/off) in RTM. (not allowed in DAM).
Dispatch	The Energy dispatched from a Resource for a Dispatch Interval of a Real-Time Market.
Dispatch Instruction	A financially binding outcome of the Real-Time Market that determines the Operating Level of a Resource at a specific time within the first Trading Interval of the Market Horizon of the Real-Time Market.
Dispatch Interval	The 5-minute Trading Interval of a Real-Time Market.

Dispatch Option	A Bid option that determines the participation of an Inter-Tie Resource or an Inter-Tie Generating Resource in the Real-Time Market: Hourly: dispatched as an Hourly Pre-Dispatched Resource with a flat Dispatch for all Trading Intervals of a Trading Hour. Once: dispatched as an Hourly Pre-Dispatched Resource with up to a single Dispatch revision in a Commitment Interval of a Trading Hour. 15min: dispatched in each Commitment Interval of a Trading Hour with a flat Dispatch for all Dispatch Intervals of that Commitment Interval. Dynamic: dispatched in each Dispatch Interval of a Trading Hour.
Dispatchable Demand Resource	A type of NGR with a continuous operating range only in the load mode: $L_{max} < L_{min} = 0 = G_{min} = G_{max}$.
Distribution Bid Component	A Bid Component for distributing the Bid, Schedule, or Dispatch of an Aggregate Generating Resource or an Aggregate Participating Load Resource.
Distribution Factor	The fraction of the Bid, Schedule, or Dispatch of an Aggregate Generating Resource or an Aggregate Participating Load Resource distributed at a Distribution Location.
Distribution Location	A Network Node.
Distribution Pair	A pair of a Distribution Location and a Distribution Factor.
Distribution Status	The Static or Dynamic nature of the Schedule or Dispatch distribution of an Aggregate Generating Resource.
Dynamic Resource	An Inter-Tie Resource or an Inter-Tie Generating Resource that can be dynamically controlled to maintain the frequency and Net Interchange of a Control Area. Registered Inter-Tie Resources and Inter-Tie Generating Resources that are Dynamic Resources are registered with Energy Type DYN.
EIM BAA	A BAA that participates in EIM, other than the CAISO.
EIM Entity	A BAA operator for one or more EIM BAAs.

EIM Entity BSC	The BSC of an EIM Entity for an EIM BAA. The EIM Entity BSC is the BSC for all EIM Non-Participating Resources associated with an intertie with that EIM BAA. In the DAM, the EIM Entity BSC is the BSC for all EIM Resources residing in or associated with an intertie with that EIM BAA. In the RTM, the EIM Entity BSC is the BSC for all EIM Resources residing in or associated with an intertie with that EIM BAA after the RTM Base Schedule Second Cutoff Time.
EIM Entity SC	The SC of an EIM Entity for an EIM BAA; it is the SC for the EIM Non-Participating Resources in that EIM BAA. The EIM Entity SC may not be the SC for an EIM Participating Resource.
EIM Inter-Tie	An Inter-Tie from an EIM BAA to a non-EIM BAA.
EIM Non-Participating Resource	An EIM Resource for which the EIM Participating Indicator is not set; it may not submit Bids in EIM.
EIM Participating Indicator	It indicates that an EIM Resource may submit Bids in EIM.
EIM Participating Resource	An EIM Resource for which the EIM Participating Indicator is set; it may submit Bids in EIM.
EIM Resource	A Resource in an EIM BAA, or an Inter-Tie Resource or Inter-Tie Generating Resource associated with an EIM Inter-Tie.
EIM Transfer	The portion of Net Interchange with other EIM BAAs or the CAISO.
ELC Self-Schedule	A Generated Self-Schedule for ELC.
ELC Self-Schedule Bid Component	A Generated Self-Schedule Bid Component for ELC.
ELC Self-Schedule Quantity	The Energy associated with an ELC Self-Schedule; it is the Minimum Load of the corresponding ELS.
Eligible PT Export Capacity	The calculated available non-RA Capacity of a Supporting Resource. It is used for Export Resource Self-Schedule priority determination.
End Date/Time	The date and time that designate the end of a time period such as a Bid Period.
Energy	The amount of electric energy that a Network component produces, transmits, or consumes within a time period.

Energy Bid Ceiling	The maximum price allowed in an Energy Bid Component.
Energy Bid Component	A Bid Component for Energy.
Energy Bid Curve	An incremental cost curve of Energy Bid Price versus Operating Level.
Energy Bid Floor	The minimum price allowed in an Energy Bid Component.
Energy Bid Price	The price to marginally produce or consume Energy at an Operating Level within an Energy Bid Segment of an Energy Bid Curve.
Energy Bid Quantity	An Operating Level that defines the start or the end of an Energy Bid Segment.
Energy Bid Range	The Capacity range of an Energy Bid Curve between the LEL and UEL, inclusive.
Energy Bid Segment	A segment of an Energy Bid Curve between two successive Energy Bid Quantities.
Energy Consumption Forecast	The forecasted energy consumption for the load served behind the meter of a Generating Resource over a Dispatch Interval.
Energy Forecast	The Energy Production Forecast or the Energy Consumption Forecast for a Generating Resource over a Dispatch Interval.
Energy Forecast Period	The time period for which an Energy Forecast applies.
Energy Imbalance Market	The extension of the Real-Time Market to BAAs other than the CAISO.
Energy Limit	A lower or upper limit on the amount of Energy scheduled and dispatched from a Resource within a Trading Day.
Energy Limit Bid Component	A Bid Component for Energy Limits.
Energy Price Index	The historical average marginal price for Energy for a specific Resource over a time period.
Energy Production Forecast	The forecasted energy production of a Generating Resource with variable energy production over a Dispatch Interval.
Energy Self Schedule Resource	Designation from Master File that limits the resource as being able to only provide Energy Self-Schedules (includes pumping Self-Schedule) in

	both DAM and RTM.
Energy Trade	A Trade of Energy.
Energy Type	An Identifier of the type of Energy from an Inter-Tie Resource as it pertains to Ancillary Service Requirements, Wheeling, or Dynamic Interchange.
Error	The Credit Indicator of a Virtual Resource Bid that CTS failed to process.
ETC Chain	A combination of individual ETCs used in sequence.
ETC Entitlement	The hourly use limit of a ETC.
ETC Link	A ETC that is not a ETC Chain.
ETC Pumping Self-Schedule	A Pumping Self-Schedule associated with an ETC.
ETC Pumping Self-Schedule Bid Component	A Bid Component for a ETC Pumping Self-Schedule.
ETC Pumping Self-Schedule Quantity	The Energy Bid Quantity for an ETC Pumping Self-Schedule.
ETC Reference	A unique identifier of an ETC.
ETC Self-Schedule	A Self-Schedule associated with an ETC.
ETC Self-Schedule Bid Component	A Bid Component for an ETC Self-Schedule.
ETC Self-Schedule Quantity	The Energy Bid Quantity for an ETC Self-Schedule.
ETCC Cutoff Time	A configurable parameter used for setting the time of day to trigger OTC/Entitlement validation for applicable bids when ETCC data is received. (similar to Market Close Time)
Existing Transmission Contract	An agreement currently in effect between a Participating Transmission Owner and another party that was executed on or before July 9, 1996, which places limitations on the ISO's operational control of Network Branches owned by the Participating Transmission Owner.
Existing Transmission Contract Calculator	An ISO application that publishes ITC OTC and TOR/ETC Entitlements.
Export Resource	A Resource that consumes Energy exported out of a BAA.

Export Resource Bid	A Bid for an Export Resource.
External Bid Status	The Bid Status exposed to the User.
External Control Area	A Control Area not modeled in the Full Network Model. An External Control Area has inter-connections with the CAISO Control Area and with other Control Areas. The inter-connections of the CAISO Control Area with External Control Areas are modeled as radial inter-ties.
Extra Long-Start Unit	A Generating Resource with a long Start-Up Time that requires a Start-Up instruction in advance of the DAM.
Extra Long-Start Unit Commitment	The Start-Up of an ELS in advance of the DAM.
Fast-Start Unit	A Generating Resource certified for Non-Spinning reserve in the RTM (it must have a Start-Up Time not greater than 10 minutes).
Final Multi-Period Bid	A promoted Multi-Period Bid for a Trading Day after the Active Day in a Day-Ahead Market Horizon, or a Trading Hour after the Active Hour in a Real-Time Market Horizon (STUC).
Final Online Generating Resource State	The Online Generating Resource State of a MSG after a State Transition.
Firm Import Resource	An Import Resource that is supported by Spinning Reserve; it is registered with an Energy Type of FIRM.
Forbidden Operating Range	A range of Operating Levels within which a Resource cannot operate in a stable manner and must ramp through.
Forward Bid Resource	Resource from Market Accepted Bid that can be used in the STUC Rule Flow. If there is a SIBR temporary administrative addition to the Forward Bid Resource exception list for a resource, that resource will not be allowed to use a Forward Bid.
Fuel Source	The registered fuel used by a Generating Resource to produce Energy.
Full Network Model	The Network used in the Market; it includes the CAISO and several other BAAs.
Gas Price Index	The average natural gas price at a specific Location and period of time.

Generated Bid	A Clean Bid generated by SIBR after the relevant Market Close Time.
Generating Capacity Limit	A limit for the total Non-Generator Resource generating Capacity that can be used for Commodities in DAM and RTM.
Generating Resource	A Resource that produces Energy.
Generating Resource Ancillary Service Bid Component	A Generating Resource Bid Component for Ancillary Services.
Generating Resource Ancillary Service Self-Provision Bid Component	A Generating Resource Bid Component for Ancillary Service Self-Provision.
Generating Resource Bid	A Bid for a Generating Resource.
Generating Resource Bid Component	A Bid Component of a Generating Resource Bid.
Generating Resource Distribution Bid Component	A Bid Component for distributing the Bid, Schedule, or Dispatch of an Aggregate Generating Resource.
Generating Resource Energy Bid Component	A Generating Resource Bid Component for Energy.
Generating Resource Energy Limit Bid Component	A Generating Resource Bid Component for Energy Limits.
Generating Resource ETC Self-Schedule Bid Component	A Generating Resource Bid Component for ETC Self Schedules.
Generating Resource Load Following Self-Provision Down Bid Component	A Generating Resource Bid Component for Load Following Down Self-Provision.
Generating Resource Load Following Self-Provision Up Bid Component	A Generating Resource Bid Component for Load Following Up Self-Provision.
Generating Resource Minimum Load Cost Bid Component	A Generating Resource Bid Component for Minimum Load Cost.
Generating Resource Non-Spinning Reserve Bid Component	A Generating Resource Bid Component for Non-Spinning Reserve.
Generating Resource Non-Spinning Reserve Self-Provision Bid Component	A Generating Resource Bid Component for Non-Spinning Reserve Self-Provision.
Generating Resource PT Self-Schedule Bid Component	A Generating Resource Bid Component for a PT Self Schedule.
Generating Resource Ramp Rate Bid Component	A Generating Resource Bid Component for Ramp Rates.



Generating Resource Regulation Down Bid Component	A Generating Resource Bid Component for Regulation Down.
Generating Resource Regulation Down Self-Provision Bid Component	A Generating Resource Bid Component for Regulation Down Self-Provision.
Generating Resource Regulation Up Bid Component	A Generating Resource Bid Component for Regulation Up.
Generating Resource Regulation Up Self-Provision Bid Component	A Generating Resource Bid Component for Regulation Up Self-Provision.
Generating Resource RUC Bid Component	A Generating Resource Bid Component for RUC Capacity.
Generating Resource Self-Schedule Bid Component	A Generating Resource Bid Component for Self-Schedules.
Generating Resource Spinning Reserve Bid Component	A Generating Resource Bid Component for Spinning Reserve.
Generating Resource Spinning Reserve Self-Provision Bid Component	A Generating Resource Bid Component for Spinning Reserve Self-Provision.
Generating Resource Start-Up Bid Component	A Generating Resource Bid Component for Start-Up.
Generating Resource State	The operating configuration indicator for a Generating Resource. All Generating Resources have an Offline Generating Resource State (0), and a default Online Generating Resource State (1). MSGs have additional Online Generating Resource States (2, 3, etc.)
Generating Resource TOR Self-Schedule Bid Component	A Generating Resource Bid Component for TOR Self-Schedules.
Generating Self-Schedule	A Self-Schedule from a NGR in generating mode.
Generating Self-Schedule Bid Component	A Bid Component for Generating Self-Schedules.
Generation Aggregation Point	An aggregate Location comprised of Generating Resources in a BAA.
Greenhouse Gas Bid	An Energy Bid Curve Price adder that applies to EIMPR and expresses the additional cost for complying with emission regulations for energy imports to California.
Greenhouse Gas Energy Cost Allowance Curve	A greenhouse gas emission cost adder to the generated Energy Bid Curve for a Generating

	Resource or MSG configuration.
Greenhouse Gas Minimum Load Cost Allowance	A per MW greenhouse gas emission cost adder to the Proxy Minimum Load Cost for a Generating Resource or MSG configuration.
Greenhouse Gas Start-Up Cost Allowance Curve	A greenhouse gas emission cost adder to the Proxy Start-Up Cost Curve for a Generating Resource or startable MSG configuration.
Grid Management Charge Energy Cost Rate	A grid management charge cost adder to each segment of the generated Energy Bid Curve for any Generating Resource or MSG configuration.
Grid Management Charge Minimum Load Cost Rate	A per MW grid management charge cost adder to the Proxy Minimum Load Cost for any Generating Resource or MSG configuration.
Grid Management Charge Start-Up Cost Adder	A grid management charge cost adder to each segment of the Proxy Start-Up Cost Curve for a Generating Resource or startable MSG configuration.
Grid Management Charge Start-Up Cost Rate	A volumetric grid management charge cost rate used to calculate the Grid Management Charge Start-Up Cost Adder for any Generating Resource or MSG configuration.
History Day	A Trading Day used to select the DAM Clean Bid as Source Bid for a Multi-Period Bid when the Bid Fill Option is "History". By default, the History Day is the last similar Trading Day (if the Trading Day is Tuesday 6/14, the default History Day will be Tuesday 6/7), but the operator may choose any Trading Day within the past seven days.
Hourly Pre-Dispatched Inter-Tie Generating Resource	An Inter-Tie Generating Resource dispatched at the same Operating Level over a Trading Hour of a Real-Time Market.
Hourly Pre-Dispatched Resource	A Resource dispatched at the same Operating Level over a Trading Hour of a Real-Time Market.
IFM Self-Schedule	The IFM committed Self-Schedule used for REM resources that are awarded Regulation Capacity from IFM.
Import Resource	A Resource that produces Energy that is imported into a BAA.
Import Resource Bid	A Bid for an Import Resource.

Incremental Fuel Cost	The cost of the fuel consumed by a Generating Resource at a given Operating Level to produce the next increment of Energy.
Incremental Fuel Cost Curve	The Incremental Fuel Cost of a Generating Resource as a function of its Operating Level.
Incremental Heat Rate	The amount of fuel consumed by a Generating Resource at a given Operating Level to produce the next increment of Energy.
Incremental Heat Rate Curve	The Incremental Heat Rate of a Generating Resource as a function of its Operating Level.
Incremental PT Self-Schedule Quantity	The positive difference between the PT Self-Schedule Quantity specified in a RTM PT Self-Schedule Bid Component and the Day-Ahead Schedule for the same Trading Hour.
Initial Online Generating Resource State	The Online Generating Resource State of a MSG before a State Transition.
Instruction	A financially binding outcome of a Market that determines the Commitment Status or Operating Level of a Resource at a specific time within the Market Horizon of that Market.
Integrated Forward Market	A Day-Ahead Market application for committing Resources and optimally scheduling Energy and Ancillary Services.
Inter-Tie	A Branch Group that inter-connects two BAAs (from a BAA to another BAA).
Inter-Tie Corridor	A collection of Inter-Tie Scheduling Points where an Energy/AS scheduling limit is enforced.
Inter-Tie Generating Resource	A Generating Resource at an Inter-Tie Scheduling Point.
Inter-Tie Resource	An Import Resource or an Export Resource at an Inter-Tie Scheduling Point; it is either a Registered Inter-Tie Resource or an Inter-Tie Transaction.
Inter-Tie Resource Ancillary Service Bid Component	An Inter-Tie Resource Bid Component for Ancillary Services.
Inter-Tie Resource Ancillary Service Self-Provision Bid Component	An Inter-Tie Resource Bid Component for Ancillary Service Self-Provision.
Inter-Tie Resource Bid	A Bid for an Inter-Tie Resource.
Inter-Tie Resource Bid Component	A Bid Component of an Inter-Tie Resource Bid.



Inter-Tie Resource Energy Bid Component	An Inter-Tie Resource Bid Component for Energy.
Inter-Tie Resource ETC Self-Schedule Bid Component	An Inter-Tie Resource Bid Component for ETC Self Schedules.
Inter-Tie Resource ETC Self-Schedule Bid Component	An Inter-Tie Resource Bid Component for ETC Self-Schedules.
Inter-Tie Resource Non-Spinning Reserve Bid Component	An Inter-Tie Resource Bid Component for Non-Spinning Reserve.
Inter-Tie Resource Non-Spinning Reserve Self-Provision Bid Component	An Inter-Tie Resource Bid Component for Non-Spinning Reserve Self-Provision.
Inter-Tie Resource PT Self-Schedule Bid Component	An Inter-Tie Resource Bid Component for a PT Self-Schedule.
Inter-Tie Resource Regulation Down Bid Component	An Inter-Tie Resource Bid Component for Regulation Down.
Inter-Tie Resource Regulation Down Self-Provision Bid Component	An Inter-Tie Resource Bid Component for Regulation Down Self-Provision.
Inter-Tie Resource Regulation Up Bid Component	An Inter-Tie Resource Bid Component for Regulation Up.
Inter-Tie Resource Regulation Up Self-Provision Bid Component	An Inter-Tie Resource Bid Component for Regulation Up Self-Provision.
Inter-Tie Resource RUC Bid Component	An Inter-Tie Resource Bid Component for RUC Capacity.
Inter-Tie Resource Self-Schedule Bid Component	An Inter-Tie Resource Bid Component for Self-Schedules.
Inter-Tie Resource Spinning Reserve Bid Component	An Inter-Tie Resource Bid Component for Spinning Reserve.
Inter-Tie Resource Spinning Reserve Self-Provision Bid Component	An Inter-Tie Resource Bid Component for Spinning Reserve Self-Provision.
Inter-Tie Resource TOR Self-Schedule Bid Component	An Inter-Tie Resource Bid Component for TOR Self-Schedules.
Inter-Tie Scheduling Limit	A scheduling limit that applies on an Inter-Tie.
Inter-Tie Scheduling Point	A Location associated with an Inter-Tie Resource.
Inter-Tie Transaction	An Inter-Tie Resource that is identified dynamically, but persistently in the Market by a unique combination of submitted Bid attributes.



Inter-Tie Transaction Identification	The unique identifier of an Inter-Tie Transaction assigned by SIBR based on a unique combination of submitted Bid attributes, as follows: SCID-LID-TID-D-BT[-ET-PSE] Where: SCID is the Scheduling Coordinator identification (required); LID is the Inter-Tie Scheduling Point identification (required); TID is the Primary Inter-Tie identification (required); D is the Direction (required): I for Import and E for Export; BT is the Bid Type (required): P for physical and V for virtual; ET is the Energy Type (required for physical transactions): F for firm, N for non-firm, U for unit-contingent, D for Dynamic Interchange, and W for Wheeling Resource; and PSE is a registered Purchase-Selling Entity (required for physical transactions) with optional trailing numerals (from ".1" to ".9"); it can be used to distinguish multiple Inter-Tie Transactions by PSE.
Invalid	The Bid Status of a Bid or a Bid Component that has failed Bid Validation.
Invalid Bid	A Bid that has failed Bid Validation.
IRR	The RA repository (IRRSNAP schema) that contains the RA Capacity information on an hourly basis.
ISO Demand Forecast Indicator	If set, it indicates that an EIM Entity has elected to use the Demand Forecast produced by the CAISO for balancing Base Schedules in their EIM BAA(s).
Isolated ISL Indicator	A Y/N ISL attribute published by ETCC indicating an isolated ISL condition where only stranded load can be served under the ISL OTC.
Isolated ITC Indicator	A Y/N ITC attribute published by ETCC indicating an isolated ITC condition where only stranded load can be served under the ITC OTC.
Lay-Off Self-Schedule	A Self-Schedule from a Pseudo-Tie indicating Energy for the relevant Native Control Area.
Lay-Off Self-Schedule Bid Component	A Bid Component for a Lay-Off Self-Schedule.

Lay-Off Self-Schedule Quantity	The Energy Bid Quantity for a Lay-Off Self-Schedule.
Limited Energy Storage Resource	A type of NGR with a continuous operating range that spans both load (charging) and generating (discharging) modes: $L_{max} < L_{min} = 0 = G_{min} < G_{max}$.
Load Capacity Limit	A limit for the total Non-Generator Resource load Capacity that can be used for Commodities in DAM and RTM.
Load Drop Rate	The rate at which a Participating Load Resource can decrease its electric power consumption.
Load Following	The Load Following Down or Load Following Up service by a MSSA.
Load Following Down Capacity	The Capacity designated for Load Following Down Self-Provision.
Load Following Down Self-Provision	The service where a MSSA decrements designated Resources to meet the relevant MSS load deviations in real time.
Load Following Down Self-Provision Bid Component	A Bid Component for Load Following Down Self Provision.
Load Following Option	The option by a MSSA to perform Load Following.
Load Following Resource	A Resource used for Load Following, registered with a MSSA that has elected the Load Following Option.
Load Following Up Capacity	The Capacity designated for Load Following Up Self-Provision.
Load Following Up Self-Provision	The service where a MSSA increments designated Resources to meet the relevant MSS load deviations in real time.
Load Following Up Self-Provision Bid Component	A Bid Component for Load Following Up Self Provision.
Load Pick-Up Rate	The rate at which a Participating Load Resource can increase its electric power consumption.
Load Reduction	The reduction of electric power consumption of a Participating Load Resource from its Base Load.
Load Reduction Initiation	The process where a Participating Load Resource decreases its electric power consumption from its Base Load.

Load Reduction Initiation Bid Component	A Bid Component for Load Reduction Initiation.
Load Reduction Initiation Cost	The Operating Cost associated with Load Reduction Initiation.
Load Reduction Initiation Instruction	An Instruction to a Participating Load Resource to decreases its electric power consumption from its Base Load.
Load Reduction Initiation Instruction	A Dispatch Instruction issued to a Participating Load Resource for Load Reduction Initiation.
Load Reduction Initiation Time	The time period required for Load Reduction Initiation after a Load Reduction Initiation Instruction is issued.
Load Resource	A Resource that consumes Energy.
Load Self-Schedule	A Self-Schedule from a NGR in load mode.
Load Self-Schedule Bid Component	A Bid Component for Load Self-Schedules.
Load Serving Entity	A market participant that is an agent for Load Resources.
Load-Serving Generator	A Generating Resource that serves load behind the meter qualifying for net Energy settlement.
Location	A Network Node or an aggregation of Network Nodes.
Long Trading Day	The Trading Day when daylight saving ends. It has 25 Trading Hours, including the additional Trading Hour from 3:00 AM PDT to 3:00 AM PST.
Lower Charge Limit	The lowest stored Energy that should be maintained in a LESR.
Lower Economic Limit	The first (lowest) Energy Bid Quantity of the Energy Bid Curve specified in an Energy Bid Component.
Lower Operating Limit	The Minimum Load of a Resource, incorporating any applicable overrates.
Lower Regulating Limit	The lowest Operating Level of a Regulating Range.
LPT Self-Schedule	Lower Priority Self-Schedule used for Exports that are not identified as being supported by non-RA Capacity
LSG Self-Schedule	A Self-Schedule for the load behind the meter of a LSG.

LSG Self-Schedule Bid Component	A Bid Component for a LSG Self-Schedule.
LSG Self-Schedule Quantity	The Energy Bid Quantity for a LSG Self-Schedule.
Major Maintenance Minimum Load Cost Adder	A major maintenance cost adder to the Proxy Minimum Load Cost for a Generating Resource or MSG configuration.
Major Maintenance Start-Up Cost Adder	A major maintenance cost adder to each segment of the Proxy Start-Up Cost Curve for a Generating Resource or startable MSG configuration.
Market	A forum where Bids for supply and demand of a Commodity are evaluated and selected so that supply meets demand.
Market Accepted Bid	A Conditionally Valid, Valid, Conditional Modified, or Modified Bid.
Market Close Time	The latest time that a physical Resource Bid can be submitted in a DAM in advance of the relevant Active Day, or in a RTM in advance of the relevant Active Hour.
Market Fill Option	A SIBR initialization parameter that controls the Multi-Period Bid Generation in the DAM when the Bid Fill Option is set to "No" or "Last": Yes: Market Accepted Bids are used as is. No: Default prices are used for SUC/MLC and Energy/AS/RUC.
Market Horizon	The time period for which Bids are evaluated in a Market.
Market Open Time	The earliest time that a Bid can be submitted in a DAM in advance of the relevant Active Day, or in a RTM in advance of the relevant Active Hour.
Market Type	An indicator specifying the Market for which a Bid is submitted.
Master File	A global Resource data registry.
Master File Requirement	A Master File data requirement.
Matching Ancillary Service Obligation Trade	A Submitted Ancillary Service Obligation Trade by the Counterparty of an Ancillary Service Obligation Trade for the same Market and Trade Period with opposite Traded Ancillary Service Obligation.
Matching Energy Trade	A Submitted Energy Trade by the Counterparty of an Energy Trade for the same Market and Trade Period at the same Location with opposite Traded

	Energy.
Maximum Capacity	The maximum sustained Operating Level of a Generating Resource.
Maximum Daily Energy Limit	The maximum Energy scheduled and dispatched from a Generating Resource within a Trading Day.
Maximum Daily Generating Energy Limit	The maximum net Energy produced by a NGR within a Trading Day.
Maximum Daily Load Energy Limit	The maximum net Energy consumed by a NGR within a Trading Day.
Maximum Daily Start-Ups	The maximum number of Start-Ups allowed for a Generating Resource within a Trading Day.
Maximum Energy Curve Segment Number	The maximum allowed number of Energy Bid Segments in Submitted Bids.
Maximum ETC Self-Schedule Quantity	The maximum ETC Self-Schedule Quantity allowed for a Resource.
Maximum Export Capacity	The maximum export capacity at a Virtual Demand Resource Location that is an Inter-Tie Scheduling Point.
Maximum Generating Capacity	The maximum generating capacity at a Virtual Supply Resource Location that is not an Inter-Tie Scheduling Point.
Maximum Import Capacity	The maximum import capacity at a Virtual Supply Resource Location that is an Inter-Tie Scheduling Point.
Maximum Load Capacity	The maximum load capacity at a Virtual Demand Resource Location that is not an Inter-Tie Scheduling Point.
Maximum Load Drop Rate	The maximum rate at which a Participating Load Resource can decrease its electric power consumption.
Maximum Load Pick-Up Rate	The maximum rate at which a Participating Load Resource can increase its electric power consumption.
Maximum Load Reduction	The maximum Load Reduction that a Participating Load Resource is certified for.
Maximum Load Reduction Initiation Time	The maximum time required for Load Reduction Initiation after a Load Reduction Initiation



	Instruction is issued.
Maximum LSG Self-Schedule Quantity	The maximum LSG Self-Schedule Quantity allowed for a Generating Resource.
Maximum NGR Generation	The maximum sustained Operating Level of a NGR operating in generating mode.
Maximum NGR Load	The maximum sustained Operating Level of a NGR operating in load mode.
Maximum Online Generating Resource State Count	The configurable maximum number of Online Generating Resource States that can be bid in a Bid.
Maximum Pumping Capacity	The maximum sustained Pumping Level of a Pumped-Storage Hydro Unit operating as a hydro pump.
Maximum Ramp Rate	The maximum Ramp Rate of an Inter-Tie Resource.
Maximum Ramp Rate Curve Segment Number	The maximum allowed number of Ramp Rate curve segments in Submitted Bids for Generating Resources.
Maximum RMT Self-Schedule Quantity	The maximum RMT Self-Schedule Quantity allowed for a Generating Resource.
Maximum Start-Up Time/Cost Curve Segment Number	The maximum allowed number of Start-Up Time/Cost Curve segments in Submitted Bids.
Maximum State Transition Time	The maximum State Transition Time for a registered State Transition Definition of a MSG. This is the NOTIFICATION time that is retrieved from MF and includes the Transition Ramp Time as part of the Notification Time (used to validate the Notification Time submitted in a bid).
Maximum Stored Energy	The maximum energy (MWh) that can be stored in a LESR.
Maximum TOR Self-Schedule Quantity	The maximum TOR Self-Schedule Quantity allowed for a Resource.
Meter Subsystem	An entity, e.g., a municipality or irrigation district, whose contiguous network and resources are part of the CAISO grid, and there are revenue quality meters installed on all MSS ties.
Meter Subsystem Aggregation	The aggregation of Metered Subsystems under a common set of options for a) Load Following, b)

	RUC participation, and c) gross versus net settlement.
Minimum Daily Energy Limit	The minimum Energy scheduled and dispatched from a Generating Resource within a Trading Day; it is used to specify maximum pumping Energy for PSH units.
Minimum Daily Generating Energy Limit	The minimum net Energy produced by a NGR within a Trading Day.
Minimum Daily Load Energy Limit	The minimum net Energy consumed by a NGR within a Trading Day.
Minimum Down Time	The minimum duration that a Generating Resource must stay off from a given Online Generating Resource State after a State Transition from that State onto another Generating Resource State (including the Offline Generating Resource State).
Minimum Energy Bid Segment Size	The minimum required size of any Energy Bid Segment in a Virtual Resource Energy Bid Component.
Minimum Gen-to-Pump Down Time	The minimum duration that a PSH must stay Offline between generating and pumping operations.
Minimum Hourly Block	The minimum number of consecutive Trading Hours that an Inter-Tie Resource must be scheduled, if at all.
Minimum Load	The minimum sustained Operating Level of a Generating Resource.
Minimum Load Cost	The Operating Cost of a Generating Resource operating at its Minimum Load.
Minimum Load Cost Basis	A Generating Resource option (applicable to all MSG configurations) that indicates the basis of the MLC determination: Registered Cost: The MLC is registered. Proxy Cost: The MLC is bid, but it cannot be higher than an approximation of the actual MLC.
Minimum Load Cost Bid Component	A Bid Component for Minimum Load Cost.
Minimum Load Fuel Cost	The cost of the fuel consumed by a Generating Resource operating at its Minimum Load.
Minimum Load Reduction	The discrete Load Reduction of a Participating Load Resource below its Base Load.

Minimum Load Reduction Cost	The Operating Cost of a Participating Load Resource operating at its Minimum Load Reduction below its Base Load.
Minimum Load Reduction Cost Bid Component	A Bid Component for Minimum Load Reduction Cost.
Minimum Load Reduction Threshold	The minimum Load Reduction allowed for any Participating Load Resource.
Minimum NGR Generation	The minimum sustained Operating Level of a NGR operating in generating mode.
Minimum NGR Load	The minimum sustained Operating Level of a NGR operating in load mode.
Minimum Pump-to-Gen Down Time	The minimum duration that a PSH must stay Offline between pumping and generating operations.
Minimum Pump-to-Pump Down Time	The minimum duration that a PSH must stay Offline between pumping operations.
Minimum Resource Down Time	The minimum duration that a Generating Resource must stay Offline State after a Shut Down from any Online Generating Resources State. This is equivalent to a Minimum Up Time for the Offline Generating Resource State.
Minimum Resource Up Time	The minimum duration that a Generating Resource must stay Online in any Online Generating Resource State, including State Transitions between Online Generating Resource States. This is equivalent to a Minimum Down Time for the Offline Generating Resource State.
Minimum State Group Down Time	The minimum duration that a Generating Resource must stay off from a given Online Generating Resource State Group after a State Transition from a State in that Group onto another State (including the Offline Generating Resource State) not in that Group.
Minimum State Group Up Time	The minimum duration that a Generating Resource must stay Online in a given Online Generating Resource State Group.
Minimum Stored Energy	The minimum energy (MWh) that must remain in a LESR.
Minimum Up Time	The minimum duration that a Generating Resource must stay Online in a given Online Generating

	Resource State.
Miscellaneous Bid Component	An hourly Bid Component for miscellaneous Bid information.
Modified Bid	A Bid modified by SIBR in Bid Processing after the Master File update for the relevant Trading Day.
MOO Resource	A Resource that is under a Must Offer Obligation for its RA Capacity, as indicated by the RA Flag.
Multi-Day Bid Resource Exception List	A persistent Resource list maintained administratively in SIBR for the purpose of overwriting market-based bids with default bids in DAM Multi-Period Bids for the Resources in that list.
Multi-Period Bid	A Bid generated for a Trading Day after the Active Day in a Day-Ahead Market Horizon for a given Day-Ahead Market, or a Trading Hour after the Active Hour in the Real-Time Market Horizon for a given Real-Time Market.
Multi-State Generator	A Generating Resource with multiple Online Generating Resource States.
Must-Offer Obligation	A condition where a Resource must participate in the DAM and/or the RTM due to Resource Adequacy requirements.
Native Control Area	The Control Area that a Pseudo-Tie resides in.
Natural Gas Resource	A Generating Resource fueled by natural gas.
NERC Tag	Inter-Tie scheduling information in accordance with NERC standards.
NET Benefit Floor Off-Peak	The minimum acceptable price as determined by the DR Net Benefits Test calculation (Casio) for Off-Peak Hours.
NET Benefit Floor On-Peak	The minimum acceptable price as determined by the DR Net Benefits Test calculation (Casio) for On-Peak Hours.
Net Interchange	The net Energy flow over all Inter-Ties of a Control Area.
Network	The collective of system components that produce, transmit, or consume Energy.
Network Branch	A Network component used to transmit electric

	energy between Network Nodes.
Network Node	A node where Network components connect.
NGR Maximum Ramp Rate Curve Segment Number	The maximum allowed number of Ramp Rate curve segments in Submitted Bids for NGR.
Non-EIM BAA	A BAA that does not participate in EIM.
Non-Firm Import Resource	An Import Resource that is not supported by Spinning Reserve; it is registered or specified with Energy Type NF.
Non-Generator Resource	A NGR is a Resource with up to two operating modes: a) a generating mode from Gmin to Gmax ($0 \leq Gmin \leq Gmax$), and b) a load mode from Lmin to Lmax ($0 \geq Lmin \geq Lmax$). Currently, a NGR has a continuous operating range and no inter-temporal constraints $Lmin = 0 = Gmin$. Currently, a NGR may not be associated with an Inter-Tie or an ECA/ACA, it may not be an RA Resource or a Supporting Resource, it may not bid Ancillary Service Self-Provision, it may not be certified for Load Following or RUC, and it may not bid Self-Schedules other than Price Taker Self-Schedules.
Non-Market-Rate Resource	A Resource for which FERC has temporarily suspended market rate authority disallowing bids at market rates.
Non-Participating Load Resource	A Load Resource that cannot be dispatched to change its Energy consumption.
Non-Participating Load Resource Bid Component	A Bid Component for a Non-Participating Load Resource.
Non-Spinning Reserve	An Ancillary Service from an Offline Generating Resource, an Inter-Tie Resource, or a participating load Resource, to provide Energy within a specified time period after a Dispatch Instruction is issued.
Non-Spinning Reserve Award	An Award for Non-Spinning Reserve from a Non-Spinning Reserve Self-Provision Bid Component and a Non-Spinning Reserve Bid Component.
Non-Spinning Reserve Bid Component	A Bid Component for Non-Spinning Reserve.

Non-Spinning Reserve Capacity	The Capacity designated for Non-Spinning Reserve.
Non-Spinning Reserve Obligation	The Demand for which a Scheduling Coordinator is financially responsible for Non-Spinning Reserve.
Non-Spinning Reserve Obligation Trade	A Trade of a Non-Spinning Reserve Obligation.
Non-Spinning Reserve Price	The price of a Bid for Non-Spinning Reserve.
Non-Spinning Reserve Self-Provision	Non-Spinning Reserve provided by a Scheduling Coordinator to primarily meet its own Non-Spinning Reserve Obligation.
Non-Spinning Reserve Self-Provision Bid Component	A Bid Component for Non-Spinning Reserve Self-Provision.
Non-Spinning Reserve Self-Provision Capacity	The Capacity designated for Non-Spinning Reserve Self-Provision.
North American Electric Reliability Council	The authoritative body with the mission to ensure that the bulk electric system in North America is reliable, adequate, and secure.
Notification Time	The notification time for completing a MSG State Transition between Online Generating Resource States (biddable).
Obsolete	The Bid Status of a Bid made obsolete by a Submitted Bid for the same SC, Resource, Resource Type, Market Type, and Bid Period, with a later Bid Submission Time.
Obsolete Bid	A Bid made obsolete by a Submitted Bid for the same SC, Resource, Resource Type, Market Type, and Bid Period, with a later Bid Submission Time.
Offline	The Commitment Status of a Generating Resource that is not connected to the grid.
Off-Peak RLC Curve	A proxy Energy Bid Curve used for RA Import Resources during Off-Peak Trading Hours.
Off-Peak Trading Hour	A Trading Hour during off-peak load conditions as specified by WECC: Mon-Sat 0:00-6:00 and 22:00-24:00, and all day on Sun and certain holidays.
Online	The Commitment Status of a Generating Resource that is connected to and synchronized with the grid.
Online Generating Resource State Group	A group of Online Generating Resource States of a MSG. Online Generating Resource State Groups



	may be nested.
Online Generating Resource State Shut- Down Capability Indicator	An Indicator that indicates whether a MSG can Start-Up to an Online Generating Resource State.
Online Generating Resource State Start-Up Capability Indicator	An Indicator that indicates whether a MSG can Shut-Down from an Online Generating Resource State.
On-Peak RLC Curve	A proxy Energy Bid Curve used for RA Import Resources during On-Peak Trading Hours.
On-Peak Trading Hour	A Trading Hour during on-peak load conditions as specified by WECC: Mon-Sat 6:00-22:00 except certain holidays.
Open Tie Status	An hourly Y/N status generated by SIBR for a Bid to indicate open or isolated ITC conditions that apply to that Bid for the relevant Trading Hour. The DAM and RTM applications would treat the Resource as unavailable in these Trading Hours producing zero Energy/AS schedules.
Operating Cost	The cost of operating a Resource.
Operating Level	The amount of electric power a Resource produces or consumes at a given time.
Operating Level Break Point	An Operating Level that defines the start or the end of a segment of an Operational Ramp Rate Curve.
Operating Reserve Ramp Rate	The Ramp Rate used to evaluate Generating Resource Bids for Spinning Reserve and Non-Spinning Reserve.
Operating Reserve Ramp Rate Bid Component	A Bid Component for Operating Reserve Ramp Rate.
Operation and Maintenance Cost	The portion of the Operating Cost of a Generating Resource that is not related to fuel cost.
Operational Ramp Rate Bid Component	A Bid Component for Operational Ramp Rate.
Operational Ramp Rate Bid Curve	The Ramp Rate curve of a Generating Resource.
Operational Transfer Capability	The dynamic directional ITC limit published by ETCC.
Participating Load Resource	A Load Resource that can be dispatched to change its Energy consumption.

Participating Load Resource Ancillary Service Bid Component	A Participating Load Resource Bid Component for Ancillary Services.
Participating Load Resource Ancillary Service Self-Provision Bid Component	A Participating Load Resource Bid Component for Ancillary Service Self-Provision.
Participating Load Resource Bid	A Bid for a Participating Load Resource.
Participating Load Resource Bid Component	A Bid Component of a Participating Load Resource Bid.
Participating Load Resource Distribution Bid Component	A Bid Component for distributing the Bid, Schedule, or Dispatch of an Aggregate Participating Load Resource.
Participating Load Resource Energy Bid Component	A Participating Load Resource Bid Component for Energy.
Participating Load Resource Energy Limit Bid Component	A Participating Load Resource Bid Component for Energy Limits.
Participating Load Resource ETC Self-Schedule Bid Component	A Participating Load Resource Bid Component for ETC Self Schedules.
Participating Load Resource Load Reduction Initiation Bid Component	A Participating Load Resource Bid Component for Load Reduction Initiation.
Participating Load Resource Minimum Load Reduction Cost Bid Component	A Participating Load Resource Bid Component for Minimum Load Reduction Cost.
Participating Load Resource Non-Spinning Reserve Bid Component	A Participating Load Resource Bid Component for Non-Spinning Reserve.
Participating Load Resource Non-Spinning Reserve Self-Provision Bid Component	A Participating Load Resource Bid Component for Non-Spinning Reserve Self-Provision.
Participating Load Resource PT Self-Schedule Bid Component	A Participating Load Resource Bid Component for a PT Self Schedule.
Participating Load Resource Ramp Rate Bid Component	A Participating Load Resource Bid Component for Ramp Rates.
Participating Load Resource RUC Bid Component	A Participating Load Resource Bid Component for RUC Capacity.
Participating Load Resource Self-Schedule Bid Component	A Participating Load Resource Bid Component for Self-Schedules.
Participating Load Resource TOR Self-Schedule Bid Component	A Participating Load Resource Bid Component for TOR Self-Schedules.
Participating Transmission Owner	A Transmission Owner that has transferred control

	of its Network Branches to the ISO.
Pending Bid Approval Option	An administrative option (Y/N) persistently maintained in SIBR and controlling whether Valid Virtual Resource Bids with Credit Status of Pending Response are approved and promoted to Clean Bids (Y) or invalidated (N) after the DAM Market Close.
Pending Request	The Credit Status assigned to a Submitted Virtual Resource Bid. In implementation, an unassigned Credit Status (null) is interpreted as a Credit Status of Pending request.
Pending Response	The Credit Status assigned to a Conditionally Valid or Valid Virtual Resource Bid after it is sent to CTS for Credit Request.
Physical Resource	A physical Resource that can actually produce or consume Energy.
Physical Resource Bid	A Bid for a Physical Resource.
Price Precision	The minimum price precision allowed in a Bid.
Price-Taker	An Energy Bid Quantity without an explicit Energy Bid Price, effectively at the lowest possible Energy Bid Price for Supply or the highest possible Energy Bid Price for Demand.
Primary Inter-Tie	The Inter-Tie associated with an Inter-Tie Resource for tagging Schedules and Awards from associated Bids when the Open Tie Status is not set for these Bids.
Priority Indicator	An indicator for each TOR/ETC and Trading Hour that indicates whether the corresponding TOR/ETC has passed or failed TOR/ETC Entitlement validation.
Proxy Demand Resource	A logical Generating Resource used to model demand response.
Proxy Minimum Load Cost	An approximation of the actual MLC for a Generating Resource registered with a Minimum Load Cost Basis of "Proxy Cost".
Proxy Start-Up Cost Curve	An approximation of the actual SUC for a Generating Resource registered with a Start-Up Cost Basis of "Proxy Cost".

Proxy State Transition Cost	An approximation of the actual STC for a MSG State Transition between Online Generating Resource States.
Pseudo-Tie	A Generating Resource within a Control Area (Native Control Area), but under the operational control of another Control Area (Attaining Control Area).
PT Export Capacity Factor	A configurable parameter used for Export Resource Self-Schedule priority determination.
PT Generating Self-Schedule	A Self-Schedule from a Price-Taker NGR in generating mode.
PT Generating Self-Schedule Bid Component	A Bid Component for a PT Generating Self-Schedule.
PT Generating Self-Schedule Bid Quantity	The Energy Bid Quantity for a PT Generating Self-Schedule.
PT Load Self-Schedule	A Self-Schedule from a Price-Taker NGR in load mode.
PT Load Self-Schedule Bid Component	A Bid Component for a PT Load Self-Schedule.
PT Load Self-Schedule Bid Quantity	The Energy Bid Quantity for a PT Load Self-Schedule.
PT Pumping Self-Schedule	A Pumping Self-Schedule from a Price Taker.
PT Pumping Self-Schedule Bid Component	A Bid Component for a PT Pumping Self-Schedule.
PT Pumping Self-Schedule Quantity	The Energy Bid Quantity for a PT Pumping Self-Schedule.
PT Self-Schedule	A Self-Schedule from a Price Taker.
PT Self-Schedule Bid Component	A Bid Component for a PT Self-Schedule.
PT Self-Schedule Quantity	The Energy Bid Quantity for a PT Self-Schedule.
Pump	A Resource that can only operate in pumping mode.
Pump Shut-Down Cost	The cost to shut down a Pumped-Storage Hydro Unit (in pumping mode) or a Pump.
Pumped-Storage Hydro Unit	A hydro generating station with the capability to operate as a hydro pump.
Pumping Bid Component	A Bid Component with pumping data for Pumped-

	Storage Hydro Units and Pumps.
Pumping Cost	The Operating Cost of a Pump or a Pumped-Storage Hydro Unit operating as a hydro pump.
Pumping Level	The fixed Operating Level of a Pump or a Pumped-Storage Hydro Unit operating as a hydro pump.
Pumping Minimum Up Time	The minimum duration that a PSH must stay Online in pumping operation.
Pumping Self-Schedule	A Self-Schedule from a Pump or a Pumped-Storage Hydro Unit operating as a hydro pump.
Pumping Self-Schedule Bid Component	A Bid Component for a Pumping Self-Schedule.
Pumping Self-Schedule Quantity	The Energy Bid Quantity for a Pumping Self-Schedule.
Purchasing-Selling Entity	A registered entity that purchases or sells Energy or Ancillary Services over Inter-Ties; it appears in electronic tags for Inter-Tie Schedules.
Quantity Precision	The minimum Capacity or Energy precision allowed in a Bid.
RA Capacity	The Capacity of a Resource under Resource Adequacy requirements, provided by IRR for each Resource and Trading Hour.
RA Flag	A Yes/No flag provided by IRR for each Resource and Trading Hour indicating whether the Resource is a RA Resource in that Trading Hour. It is used for MOO status determination.
RA Resource	A Resource with Resource Adequacy requirements.
Ramp Rate	The rate of change of the Operating Level of a Resource.
Ramp Rate Bid Component	A Bid Component for Ramp Rates.
Ramp Rate Bid Curve	The Ramp Rate curve of a Non-Generator Resource.
Real-Time Base Schedule First Cutoff Time	The first cutoff time when Base Schedules can be submitted in the RTM for the Active Hour.
Real-Time Base Schedule Second Cutoff Time	The second cutoff time when Base Schedules can be submitted in the RTM for the Active Hour.

Real-Time Base Schedule Third Cutoff Time	The third and last cutoff time when Base Schedules can be submitted in the RTM for the Active Hour.
Real-Time Demand Forecast First Cutoff Time	The first cutoff time used in the RTM to retrieve the Demand Forecast for an EIM BAA for the Active Hour for Base Schedule balancing validation.
Real-Time Demand Forecast Second Cutoff Time	The second cutoff time used in the RTM to retrieve the Demand Forecast for an EIM BAA for the Active Hour for Base Schedule balancing validation.
Real-Time Demand Forecast Third Cutoff Time	The third cutoff time used in the RTM to retrieve the Demand Forecast for an EIM BAA for the Active Hour for Base Schedule balancing validation.
Real-Time Market	A Market with a Market Horizon of consecutive Trading Intervals that span one or more consecutive Trading Hours. This Market is conducted shortly (1½ Trading Intervals) before the start of its Market Horizon. Dispatches, and Awards are financially binding for the first Trading Interval and advisory for the remaining Trading Intervals in the Market Horizon.
Real-Time Market Horizon	The number of Trading Hours in the Market Horizon of a given Real-Time Market.
Registered Export Resource	A Registered Resource that is an Export Resource.
Registered Import Resource	A Registered Resource that is an Import Resource.
Registered Inter-Tie Resource	A Registered Resource that is an Inter-Tie Resource. An Inter-Tie Generating Resource (TG) is both a Generating Resource and an Inter-Tie Resource, thus it is also a Registered Inter-Tie Resource.
Registered Resource	A Resource that is registered and identified statically in the Market by a unique resource identification.
Registry Start Date	The latest Trading Day when the registry data for a Resource has been modified.
Regulating Ramp Rate	The Ramp Rate used to evaluate Generating Resource Bids for Regulation Up and Regulation Down.

Regulating Ramp Rate Bid Component	A Bid Component for Regulating Ramp Rate.
Regulating Range	The Operating Level range within which a Generating Resource may provide Regulation.
Regulation	An Ancillary Service provided by a Resource that is dynamically controlled to maintain the frequency and Net Interchange of the ISO Control Area.
Regulation Down	Downward Regulation.
Regulation Down Award	An Award for Regulation Down from a Regulation Down Self-Provision Bid Component and a Regulation Down Bid Component.
Regulation Down Bid Component	A Bid Component for Regulation Down.
Regulation Down Capacity	The Capacity designated for Regulation Down.
Regulation Down Obligation	The Demand for which a Scheduling Coordinator is financially responsible for Regulation Down.
Regulation Down Opportunity Cost	The long-term opportunity cost for providing Regulation Down.
Regulation Down Price	The price of a Bid for Regulation Down.
Regulation Down Self-Provision	Regulation Down provided by a Scheduling Coordinator to primarily meet its own Regulation Down Obligation.
Regulation Down Self-Provision Bid Component	A Bid Component for Regulation Down Self-Provision.
Regulation Down Self-Provision Capacity	The Capacity designated for Regulation Down Self-Provision.
Regulation Energy Management	Master File designated resource with negative or positive power injection.
Regulation Energy Management Resource	A type of LESR or DDR enrolled in ISO's program to manage SOC while on Regulation.
Regulation Mileage Bid Ceiling	The maximum price allowed in a Regulation Mileage Up or Down Bid Component.
Regulation Mileage Down	An Ancillary Service for Resource movement while on Regulation Down.
Regulation Mileage Down Bid Component	A Bid Component for Regulation Mileage Down.
Regulation Mileage Down Price	The price of a Bid for Regulation Mileage Down.

Regulation Mileage Up	An Ancillary Service for Resource movement while on Regulation Up.
Regulation Mileage Up Bid Component	A Bid Component for Regulation Mileage Up.
Regulation Mileage Up Price	The price of a Bid for Regulation Mileage Up.
Regulation Up	Upward Regulation.
Regulation Up Award	An Award for Regulation Up from a Regulation Up Self-Provision Bid Component and a Regulation Up Bid Component.
Regulation Up Bid Component	A Bid Component for Regulation Up.
Regulation Up Capacity	The Capacity designated for Regulation Up.
Regulation Up Obligation	The Demand for which a Scheduling Coordinator is financially responsible for Regulation Up.
Regulation Up Obligation Trade	A Trade of Regulation Up Obligation.
Regulation Up Opportunity Cost	The long-term opportunity cost for providing Regulation Up.
Regulation Up Price	The price of a Bid for Regulation Up.
Regulation Up Self-Provision	Regulation Up provided by a Scheduling Coordinator to primarily meet its own Regulation Up Obligation.
Regulation Up Self-Provision Bid Component	A Bid Component for Regulation Up Self-Provision.
Regulation Up Self-Provision Capacity	The Capacity designated for Regulation Up Self-Provision.
Regulatory Must Run/Take	A Generating Resource that has a high scheduling priority because of regulatory requirements, e.g., run-of-the-river hydro unit, hydro unit in hydro spill condition, nuclear unit, qualifying facility, etc.
Rejected Bid	A Submitted Bid that has failed Bid Content.
Relative Proxy Minimum Load Cost Ceiling	The maximum Minimum Load Cost allowed in a Minimum Load Cost Bid Component for a Generating Resource registered with a Minimum Load Cost Basis of "Proxy Cost," relative to the Proxy Minimum Load Cost.
Relative Proxy Start-Up Cost Ceiling	The maximum Start-Up Cost allowed in a Start-Up Cost Bid Component for a Generating Resource registered with a Start-Up Cost Basis of "Proxy

	Cost," relative to the Proxy Start-Up Cost Curve.
Relative RDRR Energy Bid Floor	A configurable parameter to set what the Bid Floor is based on the Bid Ceiling Price.
Reliability Demand Response Resource	A Generating Resource that conditionally participates in the DAM and RTM under system emergency or other adverse conditions.
Reliability Must Run	A condition that applies to Generating Resources that need to operate for reliability reasons under a contract with the ISO.
Reliability Unit Commitment	A Day-Ahead Market application for committing additional Resources and optimally scheduling RUC Capacity after the IFM.
Resource	A Network component that produces or consumes Energy.
Resource Adequacy	A mandatory planning and procurement process for Load Serving Entities to ensure adequate capacity to meet their demand.
Resource Type	The type of the Resource specified in the Bid Identification of a Bid or in a Base Schedule. It can be one of the following: 1) a Generating Resource ("G"); 2) a Non-Generator Resource ("NGR"); 3) an Inter-Tie Generating Resource ("TG"); 4) a Registered Import Resource ("I"); 5) a Registered Export Resource ("E"); 6) an Import Transaction ("IT"); 7) an Export Transaction ("ET"); 8) a Non-Participating Load Resource ("L"); 9) a Virtual Generating Resource ("VG"); 10) a Virtual Load Resource ("VL"); 11) a Virtual Import Resource ("VI"); or 12) a Virtual Export Resource ("VE").
Right Indicator	A registered indicator for each TOR or ETC that indicates the contractual rights of that TOR or ETC in the DAM or RTM: physical, financial, both, or none.
RLC Curve	The On-Peak/Off-Peak Energy Bid Curve received from RLC (Potomac) and used to generate an Energy Bid Curve for an Import RA Resource.
RMR Resource	A Resource with a RMR contract.
RMR Schedule	The portion of the RUC Schedule identified as RMR.

RMT Reference	A unique identifier of a RMT.
RMT Self-Schedule	A Self-Schedule associated with a RMT.
RMT Self-Schedule Quantity	The Energy Bid Quantity for a RMT Self-Schedule.
RUC Award	An Award for scheduled RUC Capacity.
RUC Bid Ceiling	The maximum price allowed for RUC Capacity in a Generating Resource RUC Bid Component.
RUC Bid Component	A Generating Resource Bid Component for RUC Capacity.
RUC Bid Floor	The minimum price allowed for RUC Capacity in a Generating Resource RUC Bid Component.
RUC Capacity	The Capacity of a Generating Resource above its Minimum Load, or its Day-Ahead Schedule, which is bid in RUC to meet Demand in the RTM.
RUC Generating Resource State	The Generating Resource State that is associated with the RUC Schedule.
RUC Price	The price in a Generating Resource Bid Component for RUC Capacity.
RUC Schedule	The Capacity, including the Day-Ahead Schedule, scheduled by RUC for a Resource in a Trading Hour of a Day-Ahead Market.
Schedule	The Energy scheduled for production or consumption from a Resource in a Trading Hour of a Day-Ahead Market or a Commitment Interval of a Real-Time Market.
Scheduling Coordinator	A Market participant authorized by the ISO to submit Bids and Trades.
Self-Schedule	An Energy Bid that is evaluated in a Market in terms of priority instead of price.
Self-Schedule Bid Component	A Bid Component for Self-Schedules.
Self-Schedule Quantity	The Energy Bid Quantity for a Self-Schedule.
Short Trading Day	The Trading Day when daylight saving starts. It has only 23 Trading Hours because there is no Trading Hour from 2:00 AM PST to 3:00 AM PDT.
Short-Term Unit Commitment	A Real-Time Market application for committing Resources up to three Trading Hours after the Active Hour.

Shut-Down	The process where an Online Generating Resource is disconnected from the grid and is shut down.
Shut-Down Instruction	An Instruction issued to a Generating Resource to Shut-Down and be Offline at a specific time.
Shut-Down State Transition Path	A State Transition Path of Online Generating Resource States from an Online Generating Resource State to the Offline Generating Resource State (0).
Similar Trading Day	The last Trading Day that is the same day of the week with a given Trading Day.
Source Bid	The Bid used as a template to generate a Multi-Period Bid; it can be a forward Market Accepted Bid, a DAM Clean Bid, or a RTM Clean Bid. All Bid Components are copied from the Source Bid into the Multi-Period Bid.
Spinning Reserve	An Ancillary Service from an Online Generating Resource, an Inter-Tie Resource, or a Participating Load Resource, to provide Energy within a specified time period after a Dispatch Instruction is issued.
Spinning Reserve Award	An Award for Spinning Reserve from a Spinning Reserve Self-Provision Bid Component and a Spinning Reserve Bid Component..
Spinning Reserve Bid Component	A Bid Component for Spinning Reserve.
Spinning Reserve Capacity	The Capacity designated for Spinning Reserve.
Spinning Reserve Obligation	The Demand for which a Scheduling Coordinator is financially responsible for Spinning Reserve.
Spinning Reserve Obligation Trade	A Trade of a Spinning Reserve Obligation.
Spinning Reserve Price	The price of a Bid for Spinning Reserve.
Spinning Reserve Self-Provision	Spinning Reserve provided by a Scheduling Coordinator to primarily meet its own Spinning Reserve Obligation.
Spinning Reserve Self-Provision Bid Component	A Bid Component for Spinning Reserve Self-Provision.
Spinning Reserve Self-Provision Capacity	The Capacity designated for Spinning Reserve Self-Provision.
Start Date/Time	The date and time that designate the start of a time

	period such as a Bid Period.
Start-Up	The process where an Offline Generating Resource is started up and is synchronized with the grid.
Start-Up Bid Component	A Bid Component for Start-Up.
Start-Up Cost	The Operating Cost for a Generating Resource to Start-Up.
Start-Up Cost Basis	A Generating Resource option (applicable to all start-capable MSG configurations) that indicates the basis of the SUC determination: Registered Cost: The SUC is registered. Proxy Cost: The SUC is bid, but it cannot be higher than an approximation of the actual SUC.
Start-Up Cost Bid Curve	The Start-Up Cost versus Cooling Time curve in a Generating Resource Start-Up Bid Component.
Start-Up Cost Curve	The registered Start-Up Cost versus Cooling Time curve for a Generating Resource registered with a Start-Up Cost Basis of "Registered Cost".
Start-Up Energy	The Energy consumption of a Generating Resource to complete a Start-Up.
Start-Up Energy Cost	The cost of Start-Up Energy.
Start-Up Energy Cost Curve	A Start-Up Energy Cost versus Cooling Time curve for a Generating Resource.
Start-Up Energy Curve	A Start-Up Energy versus Cooling Time curve for a Generating Resource.
Start-Up Fuel	The fuel consumption of a Generating Resource to complete a Start-Up.
Start-Up Fuel Cost	The cost of Start-Up Fuel.
Start-Up Fuel Cost Curve	A Start-Up Fuel Cost versus Cooling Time curve for a Generating Resource.
Start-Up Fuel Curve	A Start-Up Fuel versus Cooling Time curve for a Generating Resource.
Start-Up Instruction	An Instruction issued to a Generating Resource to Start-Up and be Online at a specific time.
Start-Up Time	The notification time for a Generating Resource to complete a Start-Up from being Offline to its Minimum Load.

Start-Up Time Bid Curve	The Start-Up Time versus Cooling Time curve in a Generating Resource Start-Up Bid Component.
Start-Up Time Curve	The registered Start-Up Time versus Cooling Time curve for a Generating Resource.
State of Charge	The stored Energy in a LESR.
State Transition	The transition process of a MSG between Generating Resource States. The transition between the Offline and an Online Generating Resource State is a Start-Up. The transition between an Online and the Offline Generating Resource State is a Shut-Down.
State Transition Bid Component	A Bid Component for MSG Online Generating Resource State Transition data.
State Transition Cost	The Operating Cost incurred for a MSG State Transition between Online Generating Resource States.
State Transition Definition	State Transition data composed of Initial and Final Online Generating Resource States, and Notification Time and Transition Cost.
State Transition Energy	The Energy consumption of a Generating Resource to complete a State Transition between Online Generating Resource States.
State Transition Energy	The Energy consumption of a Generating Resource to complete a State Transition.
State Transition Energy Cost	The cost of State Transition Energy.
State Transition Energy Cost	The cost of State Transition Energy.
State Transition Fuel	The fuel consumption of a Generating Resource to complete a State Transition between Online Generating Resource States.
State Transition Fuel	The fuel consumption of a Generating Resource to complete a State Transition.
State Transition Fuel Cost	The cost of State Transition Fuel.
State Transition Fuel Cost	The cost of State Transition Fuel.
State Transition Path	A feasible sequence of State Transitions between Online Generating Resource States.
Storage Efficiency	The efficiency ($0 \leq SE \leq 1$) for storing Energy in a NGR operating in load mode.

Stranded Load Indicator	A registered Y/N Resource attribute that indicates a stranded load that can be served under an isolated ITC condition.
STUC Bid	A Generated Bid for each of the consecutive three Trading Hours following the Active Hour of a Real-Time Market. This Bid has a Bid Status of STUC Modified (SM) and it is not a Market Accepted Bid. SM Bids are used solely in STUC. There is no interaction between SM Bids and non-SM Bids.
STUC Bid Generation Time	The time after RTM Market Close Time when STUC Bids are generated.
Submitted Bid	A Bid submitted to a Market.
Submitted Trade	A Trade submitted to a Market.
Supply	The collective of Resources that supply Energy (i.e., Generating Resources and Imports).
Supporting Resource	A Generating Resource with non-RA Capacity that supports an Export Resource PT Self-Schedule.
System Infrastructure and Bidding Rules	The Bid validation and processing system.
Temporarily Valid Bid	A Bid that has passed Bid Validation.
Time Precision	The finest time precision allowed in Bids.
TOR Chain	A combination of individual TORs used in sequence.
TOR Entitlement	The hourly use limit of a TOR.
TOR Link	A TOR that is not a TOR Chain.
TOR Pumping Self-Schedule	A Pumping Self-Schedule associated with a TOR.
TOR Pumping Self-Schedule Bid Component	A Bid Component for a TOR Pumping Self-Schedule.
TOR Pumping Self-Schedule Quantity	The Energy Bid Quantity for a TOR Pumping Self-Schedule.
TOR Reference	A unique identifier of a TOR.
TOR Self-Schedule	A Self-Schedule associated with a TOR.
TOR Self-Schedule Bid Component	A Bid Component for TOR Self-Schedules.
TOR Self-Schedule Quantity	The Energy Bid Quantity for a TOR Self-Schedule.



Total Generating Self-Schedule Quantity	The sum of the Generating Self-Schedule Quantities specified in all Generating Self-Schedule Bid Components for a given NGR and Trading Hour; it is zero if there is no Generating Self-Schedule Bid Component.
Total Load Self-Schedule Quantity	The negative sum of the Load Self-Schedule Quantities specified in all Load Self-Schedule Bid Components for a given NGR and Trading Hour; it is zero if there is no Load Self-Schedule Bid Component.
Total Pumping Self-Schedule Quantity	The sum of the Pumping Self-Schedule Quantities specified in all TOR, ETC, and PT Pumping Self-Schedule Bid Components for a given Resource and Trading Hour; it is zero if there is no Pumping Self-Schedule Bid Component.
Total Self-Schedule Quantity	The sum of the Self-Schedule Quantities specified in all Lay-Off, TOR, ETC, RMT, PT, LPT, and LSG Self-Schedule Bid Components for a given Resource and Trading Hour; it is zero if there is no Self-Schedule Bid Component.
Trade	A trade of Energy or Ancillary Service Obligation between two Scheduling Coordinators.
Trade Content	The determination that a Trade complies with the structural rules.
Trade Identification	The section of a Trade that contains information used to identify the Trade.
Trade Period	The time period for which a Trade applies.
Trade Submission Time	The time when a Trade is submitted to a Market.
Trade Type	The type of a Trade as it pertains to the traded Commodity.
Trade Validation	The determination that a Trade complies with the Market rules.
Traded Ancillary Service Obligation	The amount of an Ancillary Service Obligation Trade.
Traded Energy Quantity	The amount of an Energy Trade.
Traded Non-Spinning Reserve Obligation Quantity	The amount of a Non-Spinning Reserve Obligation Trade.
Traded Regulation Down Obligation	The amount of a Regulation Down Obligation

Quantity	Trade.
Traded Regulation Up Obligation Quantity	The amount of a Regulation Up Obligation Trade.
Traded Spinning Reserve Obligation Quantity	The amount of a Spinning Reserve Obligation Trade.
Trading Day	A set of consecutive Trading Hours spanning a calendar day in the Market Horizon of a Day-Ahead Market. All Trading Days have 24 Trading Hours except for the Short Trading Day and the Long Trading Day.
Trading Hour	A clock hour in the Market Horizon of a Day-Ahead Market.
Trading Hub	A standard aggregation of Locations defined by the ISO.
Trading Interval	A sub-hourly time period in the Market Horizon of a Real-Time Market.
Trading Period	A Trading Day or a Trading Hour.
Transition Ramp Time	Ramp time between MSG States (retrieved from MF as TRANS_TIME, used to validate the Notification Time submitted in a bid)
Transmission Owner	An organization that owns Network Branches.
Transmission Ownership Right	A physical transmission right of a Transmission Owner on a Network Branch that is within the ISO Control Area but not under the ISO control.
Upper Charge Limit	The highest stored energy that should be allowed in a LESR.
Upper Economic Limit	The last (highest) Energy Bid Quantity of the Energy Bid Curve specified in an Energy Bid Component.
Upper Operating Limit	The Maximum Capacity of a Resource, incorporating any applicable derates.
Upper Regulating Limit	The highest Operating Level of a Regulating Range.
Use-Limited Resource	A Generating Resource whose Energy output is limited due to fuel or emission limitations.
User	An authorized SIBR user.

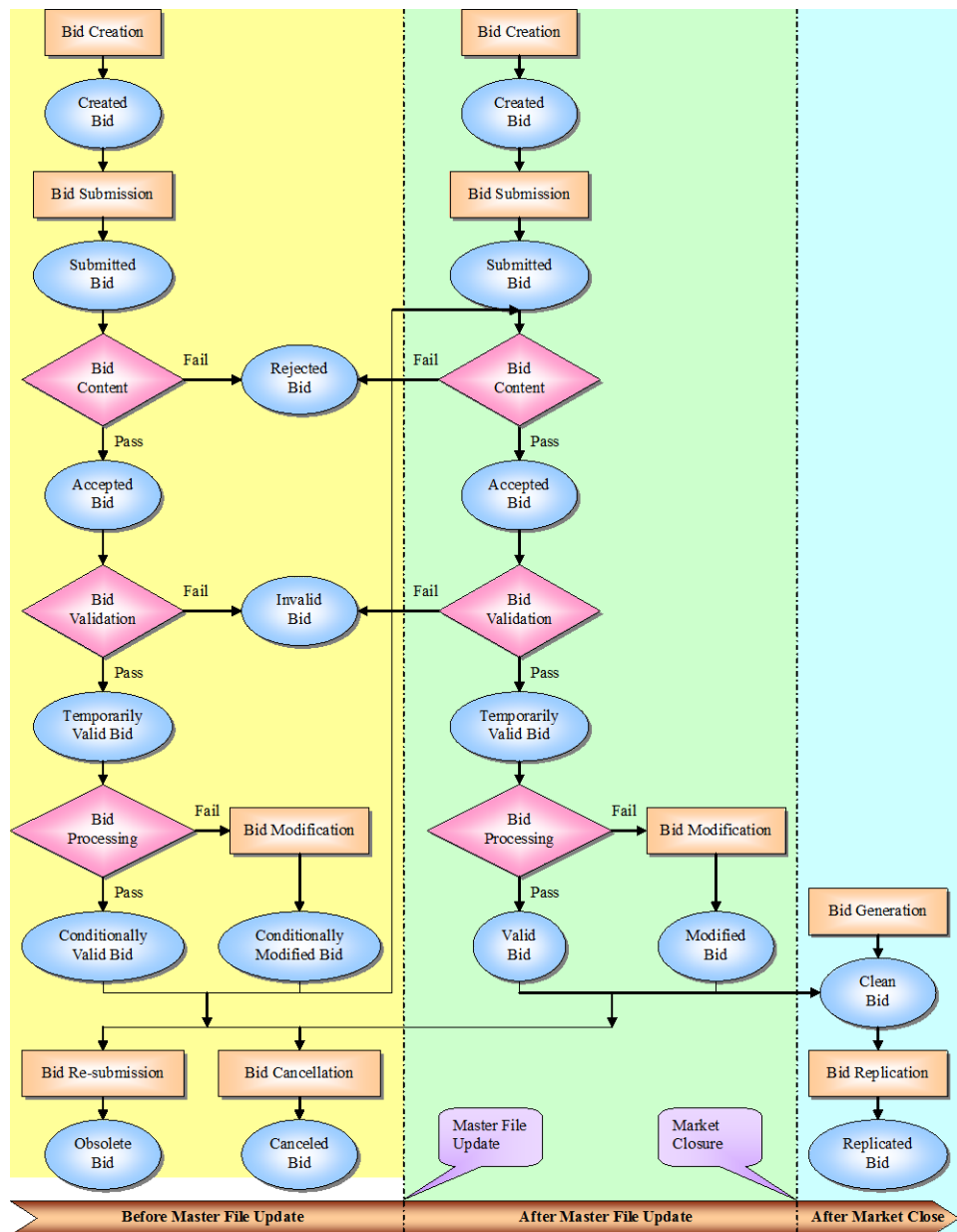
Valid	The Bid Status of a Bid or a Bid Component that has passed Bid Validation.
Valid Bid	A Bid that has passed Bid Processing after the Master File update for the relevant Trading Day.
Valid Bid Component	A Bid Component (of a Valid Bid) that has not failed any validation rules, other than cross-bid validation rules.
Variable Energy Resource	A Resource with variable non-controllable Energy production (wind, solar, run-of-the river hydro, etc.)
Virtual Demand Bid	A Bid from a Virtual Demand Resource.
Virtual Demand Resource	A Virtual Resource for Demand.
Virtual Demand Resource Location	A Location for a Virtual Demand Resource. SIBR rules support different sets for Virtual Supply/Demand Resource Locations, but these sets are identical in implementation.
Virtual Export Position Limit Factor	The portion of the Maximum Export Capacity that is allowed as the aggregate maximum Energy Bid Quantity for the Virtual Demand Resources from all SCs of a CB Entity at a Virtual Demand Resource Location that is an Inter-Tie Scheduling Point.
Virtual Export Resource	A Virtual Demand Resource at a Virtual Demand Resource Location that is an Inter-Tie Scheduling Point.
Virtual Export Resource Bid	A Bid for a Virtual Export Resource.
Virtual Generating Resource	A Virtual Supply Resource at a Virtual Supply Resource Location that is not an Inter-Tie Scheduling Point.
Virtual Generator Position Limit Factor	The portion of the Maximum Generating Capacity that is allowed as the aggregate maximum Energy Bid Quantity for the Virtual Supply Resources from all SCs of a CB Entity at a Virtual Supply Resource Location that is not an Inter-Tie Scheduling Point.
Virtual Import Position Limit Factor	The portion of the Maximum Import Capacity that is allowed as the aggregate maximum Energy Bid Quantity for the Virtual Supply Resources from all SCs of a CB Entity at a Virtual Supply Resource Location that is an Inter-Tie Scheduling Point.
Virtual Import Resource	A Virtual Supply Resource at a Virtual Supply Resource Location that is an Inter-Tie Scheduling

	Point.
Virtual Import Resource Bid	A Bid for a Virtual Import Resource.
Virtual Load Position Limit Factor	The portion of the Maximum Load Capacity that is allowed as the aggregate maximum Energy Bid Quantity for the Virtual Demand Resources from all SCs of a CB Entity at a Virtual Demand Resource Location that is not an Inter-Tie Scheduling Point.
Virtual Load Resource	A Virtual Demand Resource at a Virtual Demand Resource Location that is not an Inter-Tie Scheduling Point.
Virtual Resource	A non-physical non-registered Resource that may only participate in the DAM with Energy Bid Components.
Virtual Resource Bid	A Bid for a Virtual Resource.
Virtual Resource Bid Market Close Time	The latest time that a Virtual Resource Bid can be submitted in a DAM in advance of the relevant Active Day. It must not be later than and not earlier than one hour before the Market Close Time.
Virtual Resource Location	A Location for a Virtual Resource.
Virtual Resource Position Limit	The maximum administrative limit allowed for the aggregate Energy Bid Quantity in the Virtual Resource Bids from all SCs of a CB Entity at a Virtual Resource Location.
Virtual Supply Resource	A Virtual Resource for Supply.
Virtual Supply Resource Bid	A Bid from a Virtual Supply Resource.
Virtual Supply Resource Location	A Location for a Virtual Supply Resource. SIBR rules support different sets for Virtual Supply/Demand Resource Locations, but these sets are identical in implementation.
Western Electricity Coordinating Council	The authoritative body setting standards for the reliable operation of the interconnected electrical system between Western Canada, Mexico, and the Western United States.
Wheeling Bid Component	A Bid Component used for a Wheeling Transaction.
Wheeling Export Resource	An Export Resource used for Wheeling Transactions.

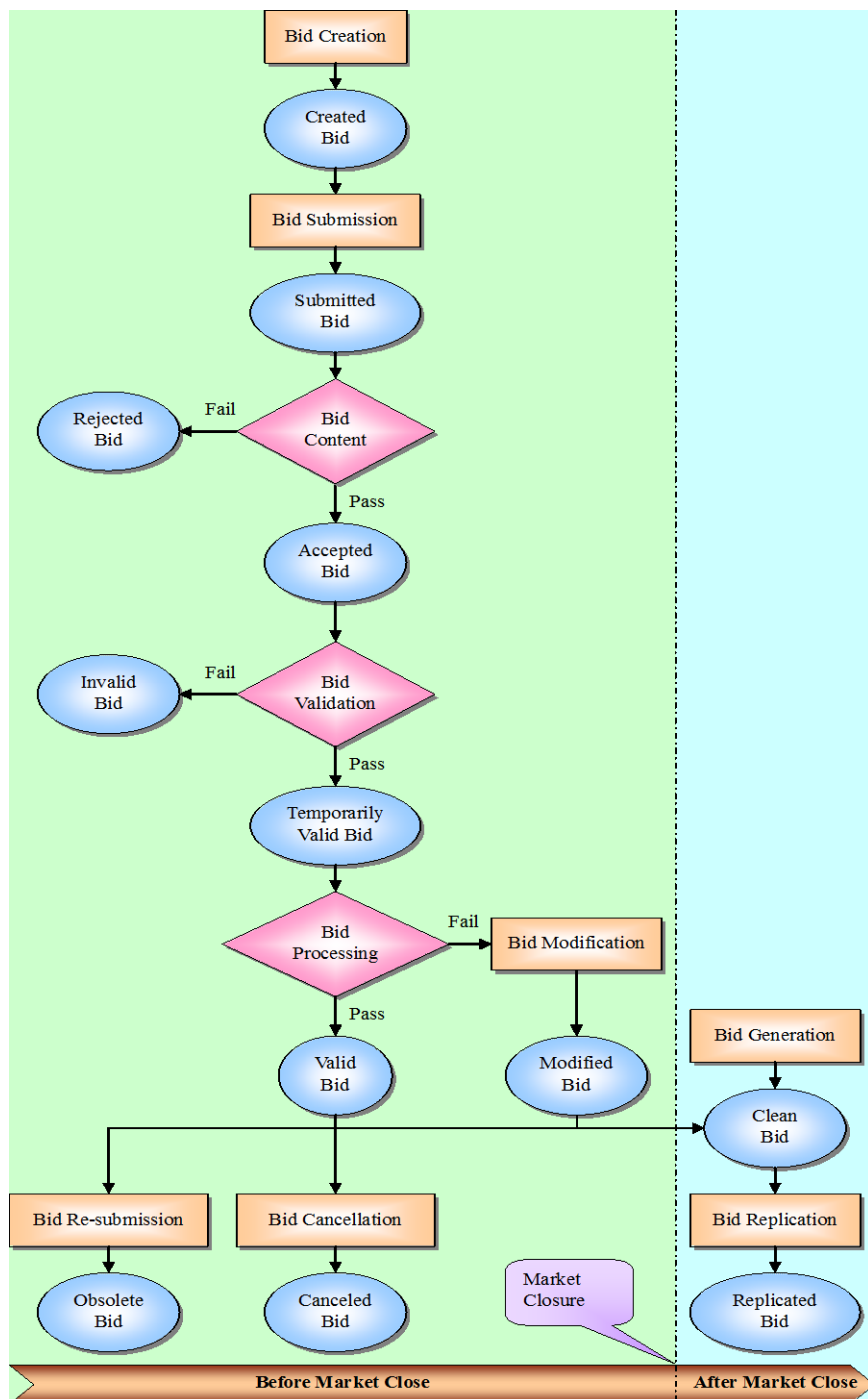
Wheeling Import Resource	An Import Resource used for Wheeling Transactions.
Wheeling Resource	A Wheeling Import Resource or a Wheeling Export Resource; Registered Inter-Tie Resources that are Wheeling Resources are registered with Energy Type of WHL; Inter-Tie Transactions that are Wheeling Resources are specified with Energy Type of WHL.
Wheeling Transaction	Balanced Energy exchange between an Import and an Export Resource.
Worst Operating Reserve Ramp Rate	The Operating Reserve Ramp Rate of a Generating Resource under worst operating conditions.
Worst Operational Ramp Rate Curve	The Operational Ramp Rate Curve of a Generating Resource under worst operating conditions.
Worst Regulating Ramp Rate	The Regulating Ramp Rate of a Generating Resource under worst operating conditions.

Appendix B Processing Flowcharts

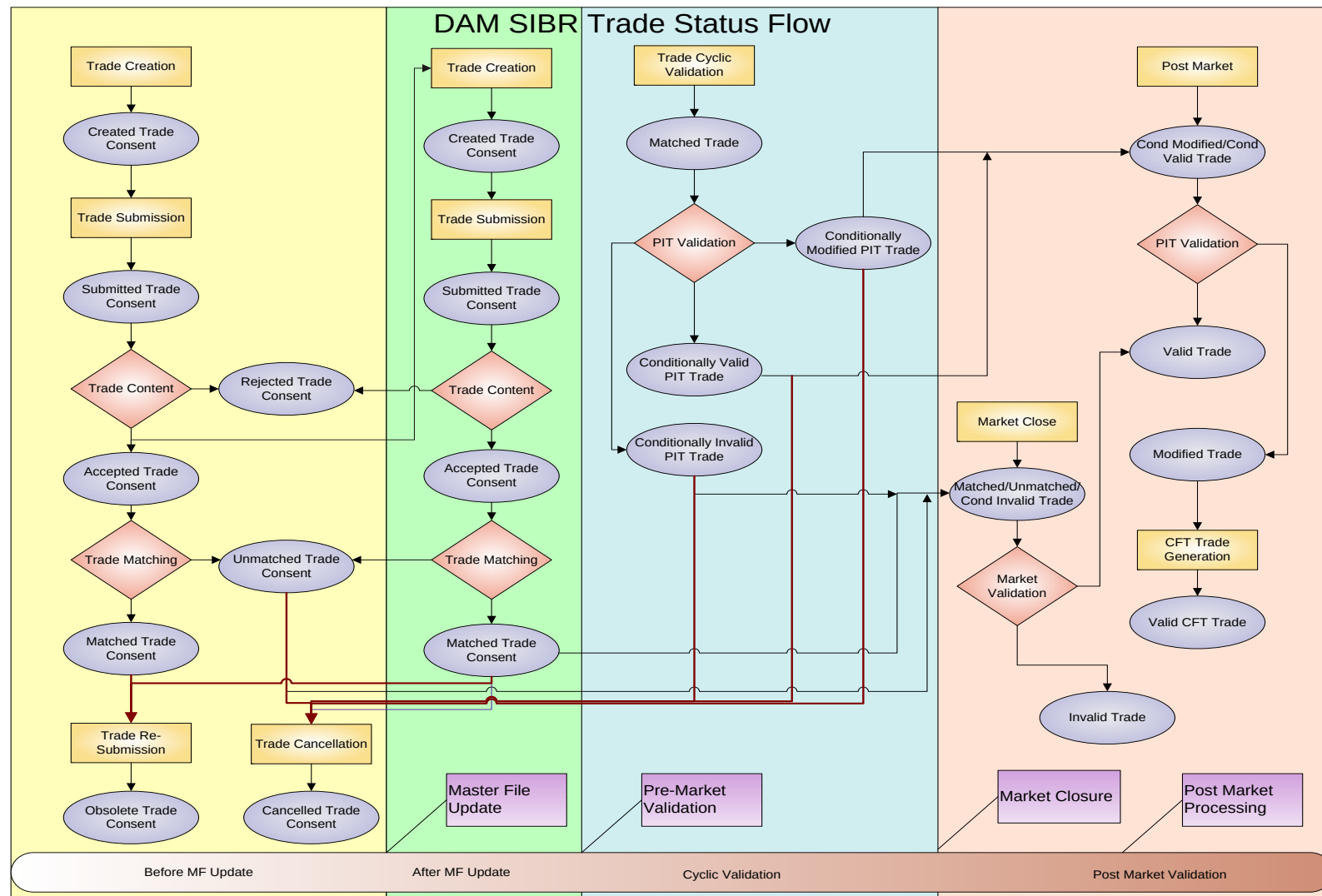
Day Ahead Bid processing flow:

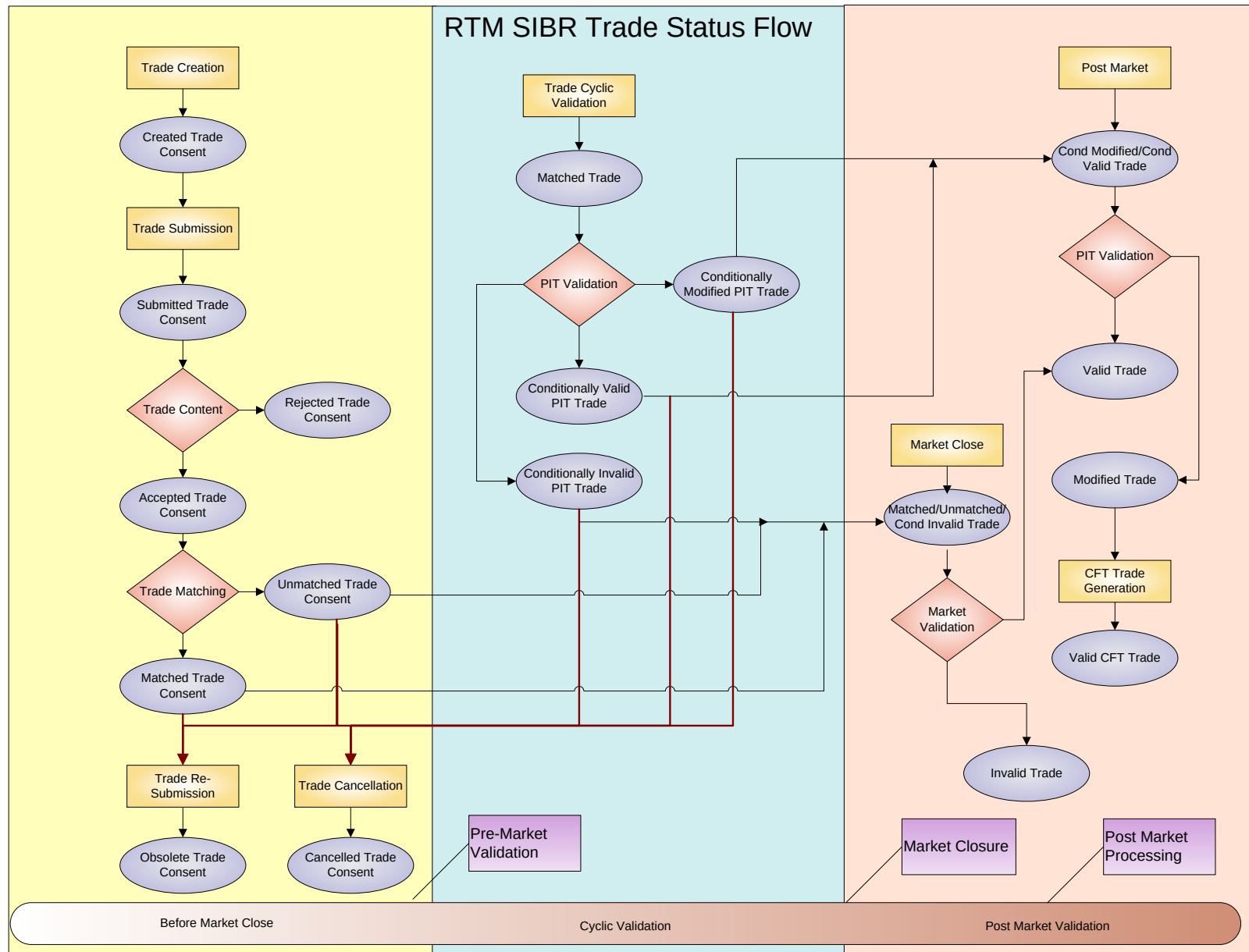


Real-Time Bid processing flow:



Trade process flow:





 California ISO Shaping a Renewed Future	SIBR – Scheduling Coordinator Users Guide	Version: 5.0 Date: 11/4/2014
--	--	---

This Page Left Blank